

Subhead-1

Wiring & Cables

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.1	<u>POINT WIRING</u> <u>CHANNEL POINT WIRING (BYM)(WITHOUT SWITCH)</u> Surface channel wiring for the following point looping at the switch board with earth terminal with 1C-2x1.5 sqmm PVC insulated and sheathed stranded cable (BYM) and 1C-1x1.5 sqmm PVC insulated ECC(BYA) (Green / Yellow bi-colour) including circuit wiring (From SDB to Switch Board) with 1C-2x2.5 sqmm PVC insulated and sheathed stranded cable (BYM) & 1C-2x2.5 sqmm PVC insulated ECC(BYA) Green / Yellow bi-colour through minimum 1 mm thick PVC channel complete with 18 SWG GP sheet / PVC switch board (preferably concealed) with 3mm thick ebonite sheet cover, circular box, without switch, fixing materials, other accessories etc. as required and mending the damages good. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standard along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge.					
1.1.1	Cables manufactured by Govt. of Bangladesh owned / shared company Ltd. (Eastern cables) approved by the Engineer In Charge.					
1.1.1.1	Light / exhaust or wall bracket fan point	Point	1,236.00	1230	1211	1211
1.1.1.2	Fan point	Point	1,236.00	1230	1211	1211
1.1.1.3	Call bell point with gang bell push	Point	1,270.00	1265	1255	1255
1.1.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge.					
1.1.2.1	Light / exhaust or wall bracket fan point	Point	1,127.00	1122	1102	1102
1.1.2.2	Fan point	Point	1,127.00	1122	1102	1102
1.1.2.3	Call bell point with gang bell push	Point	1,159.00	1153	1134	1134
1.2	<u>SURFACE CONDUIT POINT WIRING (BYM) (WITHOUT SWITCH)</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Surface conduit wiring for following point looping at the switch board with earth terminal with 1C-2x1.5 sqmm PVC insulated and sheathed stranded cable (BYM) & 1C-2x1.5 sqmm PVC insulated ECC(BYA) (Green / Yellow bi-colour) including circuit wiring (From SDB to Switch Board) with 1C-2x2.5 sqmm PVC insulated and sheathed stranded cable (BYM) & 1C-2x2.5 sqmm PVC insulated ECC(BYA) Green / Yellow bi-colour through PVC conduit (one conduit from switch board to common point on ceiling is considered to draw 3 pair of cable) of reputed manufacturer of minimum 16-25 mm inner dia as required with 1.5					
	mm wall thickness complete with 18 SWG GP sheet / PVC switch board and pull box (preferably concealed) with 3mm thick ebonite sheet cover, without switch, fixing materials, other accessories etc. as required including mending the damages good. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standards along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge.					
1.2.1	Cables manufactured by Govt. of Bangladesh owned / shared company ltd. (Eastern Cables) approved by the Engineer In Charge					
1.2.1.1	Light / Exhaust or wall bracket Fan point	Point	1,341.00	1336	1314	1314
1.2.1.2	Fan point	Point	1,341.00	1336	1314	1314
1.2.1.3	Call Bell point with gang bell push	Point	1,415.00	1410	1387	1387
1.2.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge.					
1.2.2.1	Light / exhaust or wall bracket fan point	Point	1,227.00	1222	1200	1200
1.2.2.2	Fan point	Point	1,227.00	1222	1200	1200
1.2.2.3	Call bell point with gang bell push	Point	1,301.00	1296	1274	1274

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.3	<u>SURFACE CONDUIT POINT WIRING (BYA) (WITHOUT SWITCH)</u>					
	Surface conduit wiring for following point looping at the switch board with earth terminal with 1C-2x1.5 sqmm PVC insulated cable (BYA) & 1C-2x1.5 sqmm PVC insulated ECC (BYA) (Green / Yellow bi-colour) including circuit wiring (From SDB to Switch Board) with 1C-2x2.5 sqmm PVC insulated cable (BYA) & 1C-2x2.5 sqmm PVC insulated ECC (BYA) Green / Yellow bi-colour through PVC conduit (one conduit from switch board to common point on ceiling is considered to draw 3 pair of cable) of reputed manufacturer of minimum 25 mm inner dia with 1.5 mm wall thickness complete with 18 SWG GP sheet / PVC switch board and pull box (preferably concealed) with 3 mm thick ebonite sheet cover, without switch, fixing materials, other accessories etc. as required including mending the damages good. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standards along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge.					
1.3.1	Cables manufactured by Govt. of Bangladesh owned / shared company ltd. (Eastern cables) approved by the Engineer In Charge.					
1.3.1.1	Light / Exhaust or wall bracket fan point	Point	1,211.00	1207	1185	1185
1.3.1.2	Fan point	Point	1,211.00	1207	1185	1185
1.3.1.3	Call bell point with gang bell push	Point	1,285.00	1281	1258	1258
1.3.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge					
1.3.2.1	Light / exhaust or wall bracket fan point	Point	1,124.00	1119	1097	1097
1.3.2.2	Fan point	Point	1,124.00	1119	1097	1097
1.3.2.3	Call bell point with gang bell push	Point	1,197.00	1192	1171	1171
1.4	<u>SURFACE CONDUIT POINT WIRING (FR) (WITHOUT SWITCH)</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Surface conduit wiring for following point looping at the switch board with earth terminal with 1C-2x1.5 sqmm fire & flame retardant (FR), PVC insulated and stranded cable & 1C-2x1.5 sqmm FR PVC insulated ECC Green / Yellow bi-colour including circuit wiring (From SDB to Switch Board) with 1C-2x2.5 sqmm fire & flame retardant (FR) insulated and stranded cable & 1C-2x2.5 sqmm FR PVC insulated ECC (Green / Yellow bi-colour) through PVC conduit (one conduit from switch board to common point on ceiling is considered to draw 3 pairs cable) of reputed manufacturer of minimum 25 mm inner dia with 1.7 mm wall thickness complete with 18 SWG GP sheet / PVC switch board and pull box (preferably concealed) with 3 mm thick ebonite sheet cover, without switch, fixing materials, other accessories etc. as required including mending the damages good. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standards along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge.					
1.4.1	Cables manufactured by Govt. of Bangladesh owned / shared company ltd. (Eastern cables) approved by the Engineer In Charge.					
1.4.1.1	Light / exhaust or wall bracket fan point	Point	1,346.00	1341	1320	1320
1.4.1.2	Fan point	Point	1,346.00	1341	1320	1320
1.4.1.3	Call bell point with gang bell push	Point	1,431.00	1425	1404	1404
1.4.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge					
1.4.2.1	Light / exhaust or wall bracket fan point	Point	1,200.00	1195	1174	1174
1.4.2.2	Fan point	Point	1,200.00	1195	1174	1174
1.4.2.3	Call bell point with gang bell push	Point	1,274.00	1269	1248	1248

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.5	<u>SURFACE CONDUIT POINT WIRING (ZERO HALOGEN)(WITHOUT SWITCH)</u> Surface conduit wiring for following point looping at the switch board with earth terminal with 1C-2x1.5 sqmm with following Zero Halogen polyolefine (BYA-LS Zero Halogen) and 1C-2x1.5 sqmm Zero Halogen polyolefine ECC wire including circuit wiring (From SDB to Switch Board) with 1C-2x2.5 sqmm with Zero Halogen polyolefine (BYA-LS Zero Halogen) and 1C-2x2.5 sqmm Zero Halogen polyolefine ECC wire through PVC conduit (one conduit from switch board to common point on ceiling is considered to draw 3 pair of cable) of reputed manufacturer of minimum 25 mm inner dia with 1.7 mm wall thickness complete with 18 SWG GP sheet switch board and pull box (preferably concealed) with 3 mm thick ebonite sheet cover, without switch, fixing materials, other accessories etc. as required including mending the damages good. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standards along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge.					
1.5.1	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge					
1.5.1.1	Light / Exhaust or wall bracket Fan point	Point	1,192.00	1192	1192	1192
1.5.1.2	Fan point	Point	1,192.00	1192	1192	1192
1.5.1.3	Call Bell point with gang bell push	Point	1,266.00	1266	1266	1266
1.6	<u>CONCEALED CONDUIT POINT WIRING (BYM) (WITHOUT SWITCH)</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Concealed conduit wiring for following point looping at the switch board with earth terminal with 1C-2x1.5 sqmm PVC insulated and sheathed stranded cable (BYM) & 1C-2x1.5 sqmm PVC insulated ECC (BYA) (Green / Yellow bi-colour) including circuit wiring with (From SDB to Switch Board) 1C-2x2.5 sqmm PVC insulated and sheathed stranded cable (BYM) & 1C-2x2.5 sqmm PVC insulated ECC (BYA) Green / Yellow bi-colour through PVC conduit (one conduit from switch board to common point on ceiling is considered to draw 3 pair of cable) of reputed manufacturer of minimum 25 mm dia & 1.7 mm wall thickness complete with 18 SWG GP sheet / PVC switch board & pull box with 3mm thick ebonite sheet cover, without switch, fixing materials etc.(without switch) as required including mending the damages good. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standards along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge.					
1.6.1	Cables manufactured by Govt. of Bangladesh owned / shared company ltd. (Eastern cables) approved by the Engineer In Charge.					
1.6.1.1	Light / exhaust or wall bracket fan point	Point	1,410.00	1405	1378	1378
1.6.1.2	Fan point	Point	1,410.00	1405	1378	1378
1.6.1.3	Call bell point with gang bell push	Point	1,484.00	1478	1452	1452
1.6.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge					
1.6.2.1	Light/ exhaust or wall bracket fan point	Point	1,296.00	1290	1264	1264
1.6.2.2	Fan point	Point	1,296.00	1290	1264	1264
1.6.2.3	Call bell point with gang bell push	Point	1,369.00	1364	1338	1338
1.7	<u>CONCEALED CONDUIT POINT WIRING (BYA)(WITHOUT SWITCH)</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Concealed conduit wiring for following point looping at the switch board with earth terminal with 1C-2x1.5 sqmm PVC insulated cable (BYA) & 1C-2x1.5 sqmm PVC insulated ECC(BYA) Green / Yellow bi-colour including circuit wiring (From SDB to Switchboard) with 1C-2x2.5 sqmm PVC insulated cable (BYA) & 1C-2x2.5 sqmm PVC insulated ECC (BYA) (Green / Yellow bi-colour) through PVC conduit (one conduit from switch board to common point on ceiling is considered to draw 3 pair of cable) of reputed manufacturer) of minimum 25 mm dia & 1.7 mm wall thickness complete with 18 SWG GP sheet / PVC switch board pull box with 3mm thick ebonite sheet cover, fixing materials etc.(without switch) as required including mending the damages good. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standard along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge.					
1.7.1	Cables manufactured by Govt. of Bangladesh owned / shared company Ltd. (Eastern cables) approved by the Engineer In Charge.					
1.7.1.1	Light / exhaust or wall bracket fan point	Point	1,280.00	1275	1249	1249
1.7.1.2	Fan point	Point	1,280.00	1275	1249	1249
1.7.1.3	Call bell point with gang bell push	Point	1,354.00	1348	1323	1323
1.7.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge					
1.7.2.1	Light / exhaust or wall bracket fan point	Point	1,193.00	1187	1161	1161
1.7.2.2	Fan point	Point	1,193.00	1187	1161	1161
1.7.2.3	Call bell point with gang bell push	Point	1,266.00	1261	1234	1234
1.8	<u>WIRING FOR POINT, CIRCUIT, POWER, SUB-MAIN, FEEDERS ETC. CHANNEL WIRING (BYM)</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Surface channel wiring with the following PVC insulated and sheathed stranded cable (BYM) & Green / Yellow bi-colour PVC insulated ECC wire (BYA), through minimum 1 mm thick PVC channel complete with fixing materials, other accessories etc. as required including mending the damages good.					
	All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standards along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge.					
1.8.1	Cables manufactured by Govt. of Bangladesh owned / shared company ltd. (Eastern cables) approved by the Engineer In Charge.					
1.8.1.1	1C-2x1.5 sqmm (BYM) cable with 1.5 sqmm (BYA) ECC wire	Meter	155.00	155	153	153
1.8.1.2	1C-2x2.5 sqmm (BYM) cable with 2.5 sqmm (BYA) ECC wire	Meter	213.00	213	212	212
1.8.1.3	1C-2x4 sqmm (BYM) cable with 4 sqmm (BYA) ECC wire	Meter	309.00	308	307	307
1.8.1.4	1C-2x6 sqmm (BYM) cable with 6 sqmm (BYA) ECC wire	Meter	431.00	431	429	429
1.8.1.5	1C-2x10 sqmm (BYM) cable with 10 sqmm (BYA) ECC wire	Meter	665.00	664	663	663
1.8.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge.					
1.8.2.1	1C-2x1.5 sqmm (BYM) cable with 1.5 sqmm (BYA) ECC wire	Meter	140.00	139	138	138
1.8.2.2	1C-2x2.5 sqmm (BYM) cable with 2.5 sqmm (BYA) ECC wire	Meter	194.00	193	191	191
1.8.2.3	1C-2x4 sqmm (BYM) cable with 4 sqmm (BYA) ECC wire	Meter	275.00	274	272	272
1.8.2.4	1C-2x6 sqmm (BYM) cable with 6 sqmm (BYA) ECC wire	Meter	382.00	381	380	380
1.8.2.5	1C-2x10 sqmm (BYM) cable with 10 sqmm (BYA) ECC wire	Meter	595.00	594	593	593
1.9	<u>Channel WIRING (BYA)</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Surface channel wiring with the following PVC insulated stranded cable (BYA) & Green / Yellow bi-colour PVC insulated ECC wire (BYA) through minimum 1 mm thick PVC channel complete with fixing materials, other accessories etc. as required including mending damages good. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standards along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge.					
1.9.1	Cables manufactured by Govt. of Bangladesh owned / shared company ltd. (Eastern cables) approved by the Engineer In Charge.					
1.9.1.1	1C-2x1.5 sq. mm (BYA) cable with 1.5 sqmm (BYA) ECC wire	Meter	137.00	137	135	135
1.9.1.2	1C-2x2.5 sq. mm (BYA) cable with 2.5sqmm (BYA) ECC wire	Meter	195.00	194	193	193
1.9.1.3	1C- 2x4 sq. mm (BYA) cable with 4 sqmm (BYA) ECC wire.	Meter	290.00	290	289	289
1.9.1.4	1C-2x6 sq. mm (BYA) cable with 6 sqmm (BYA) ECC wire	Meter	418.00	417	416	416
1.9.1.5	1C-2x10 sqmm (BYM) cable with 10 sqmm (BYA) ECC wire	Meter	665.00	664	663	663
1.9.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge					
1.9.2.1	1C-2x1.5 sq. mm (BYA) cable with 1.5 sqmm (BYA) ECC wire	Meter	125.00	124	123	123
1.9.2.2	1C-2x2.5 sq. mm (BYA) cable with 2.5 sqmm (BYA) ECC wire	Meter	177.00	177	175	175
1.9.2.3	1C-2x4 sq. mm (BYA) cable with 4 sqmm (BYA) ECC wire.	Meter	255.00	255	253	253
1.9.2.4	1C-2x6 sq. mm (BYA) cable with 6 sqmm (BYA) ECC wire	Meter	361.00	361	360	360
1.9.2.5	1C-2x10 sqmm (BYM) cable with 10 sqmm (BYA) ECC wire	Meter	583.00	583	582	582
1.10	<u>SURFACE WIRING (BYM) (THROUGH PVC CONDUIT)</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Surface conduit wiring with the following PVC insulated and sheathed cable (BYM) & Green / Yellow bi-colour PVC insulated ECC wire (BYA) through PVC conduit of reputed manufacturer complete with 18 SWG GP sheet pull box with 3 mm thick ebonite sheet cover, fixing materials, other accessories etc. as required including mending the damages good. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standards along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge.					
1.10.1	Cables manufactured by Govt. of Bangladesh owned / shared company ltd. (Eastern cables) approved by the Engineer In Charge.					
1.10.1.1	1C-2x1.5sqmm (BYM) cable with 1.5 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 20 mm having wall thickness of 1.5 mm	Meter	214.00	213	211	211
1.10.1.2	1C-2x2.5 sqmm (BYM) cable with 2.5 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.5 mm	Meter	288.00	287	285	285
1.10.1.3	1C-2x4.0 sqmm (BYM) cable with 4 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	382.00	381	378	378
1.10.1.4	1C-2x6.0 sqmm (BYM) cable with 6 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	515.00	515	512	512
1.10.1.5	1C-2x10 sqmm (BYM) cable with 10 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.9 mm	Meter	791.00	789	786	786
1.10.1.6	1C-2x16 sqmm (BYM) cable with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm	Meter	1,174.00	1174	1170	1170
1.10.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge					
1.10.2.1	1C-2x1.5 sqmm (BYM) cable with 1.5 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 20 mm having wall thickness of 1.5 mm	Meter	198.00	196	194	194
1.10.2.2	1C-2x2.5sqmm (BYM) cable with 2.5 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	268.00	267	264	264

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.10.2.3	1C-2x4.0 sqmm (BYM) cable with 4 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	348.00	347	344	344
1.10.2.4	1C-2x6.0 sqmm (BYM) cable with 6 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	448.00	447	445	445
1.10.2.5	1C-2x10sqmm (BYM) cable with 10sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.7 mm	Meter	702.00	701	698	698
1.10.2.6	1C-2x16 sqmm (BYM) cable with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 1.9 mm	Meter	1,070.00	1069	1066	1066
1.11	<u>SURFACE WIRING (BYA) (THROUGH PVC CONDUIT)</u> Surface conduit wiring with the following PVC insulated cable (BYA) & PVC insulated Green / Yellow bi-colour ECC wire (BYA) through PVC conduit of reputed manufacturer complete with 18 SWG GP sheet pull box with 3mm thick ebonite sheet cover, fixing materials, other accessories etc. including mending the damages good as required. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standards along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge.					
1.11.1	Cables manufactured by Govt. of Bangladesh owned / shared company ltd. (Eastern cables) approved by the Engineer In Charge.					
1.11.1.1	1C-2x1.5sqmm (BYA) cable with 1.5sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 20 mm having wall thickness of 1.5 mm	Meter	188.00	187	185	185
1.11.1.2	1C-2x2.5sqmm (BYA) cable with 2.5sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	262.00	262	259	259
1.11.1.3	1C-2x4.0 sqmm (BYA) cable with 4 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.5 mm	Meter	328.00	328	325	325
1.11.1.4	1C-2x6.0 sqmm (BYA) cable with 6 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	491.00	490	487	487
1.11.1.5	1C-2x10 sqmm (BYA) cable with 10 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.9 mm	Meter	748.00	747	744	744

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.11.1.6	1C-2x16 sqmm (BYA) cable with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm	Meter	1,141.00	1140	1136	1136
1.11.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge					
1.11.2.1	1C-2x1.5sqmm (BYA) cable with 1.5sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 20 mm having wall thickness of 1.5 mm		176.00	176	173	173
1.11.2.2	1C-2x2.5sqmm (BYA) cable with 2.5sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm		244.00	244	242	242
1.11.2.3	1C-2x4.0 sqmm (BYA) cable with 4 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm		328.00	328	325	325
1.11.2.4	1C-2x6.0 sqmm (BYA) cable with 6 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	435.00	434	431	431
1.11.2.5	1C-2x10 sqmm (BYA) cable with 10 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 31 mm having wall thickness of 1.9 mm	Meter	677.00	675	672	672
1.11.2.6	1C-2x16 sqmm (BYA) cable with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm	Meter	1,033.00	1032	1029	1029
1.12	<u>SURFACE WIRING (FR) (THROUGH PVC CONDUIT)</u> Surface conduit wiring with the following Fire & Flame Retardant (FR) (PVC) insulated and stranded cable and FR (PVC) insulated ECC wire connecting at both ends through PVC conduit of reputed manufacturer complete with 18 SWG GP sheet pull box with 3 mm thick ebonite sheet cover, fixing materials, other accessories etc. including mending the damages good as required. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standards along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge.					
1.12.1	Cables manufactured by Govt. of Bangladesh owned / shared company ltd. (Eastern cables) approved by the Engineer In Charge.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.12.1.1	1C-2x1.5 sqmm (FR) cable with 1.5 sqmm (FR) ECC wire through PVC pipe of minimum inner dia 20 mm having wall thickness of 1.5 mm	Meter	205.00	205	201	201
1.12.1.2	1C-2x2.5 sqmm (FR) cable with 2.5 sqmm (FR) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	278.00	277	274	274
1.12.1.3	1C-2x4.0 sqmm (FR) cable with 4 sqmm (FR) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	371.00	370	367	367
1.12.1.4	1C-2x6.0 sqmm (FR) cable with 6 sqmm (FR) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	493.00	492	489	489
1.12.1.5	1C-2x10 sqmm (FR) cable with 10 sqmm (FR) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.9 mm	Meter	755.00	753	750	750
1.12.1.6	1C-2x16 sqmm (FR) cable with 16 sqmm (FR) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm	Meter	1,159.00	1157	1154	1154
1.12.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge					
1.12.2.1	1C-2x1.5 sqmm (FR) cable with 1.5 sqmm (FR) ECC wire through PVC pipe of minimum inner dia 20 mm having wall thickness of 1.5 mm	Meter	194.00	193	190	190
1.12.2.2	1C-2x2.5 sqmm (FR) cable with 2.5 sqmm (FR) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	264.00	263	260	260
1.12.2.3	1C-2x4.0 sqmm (FR) cable with 4 sqmm (FR) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	345.00	343	341	341
1.12.2.4	1C-2x6.0 sqmm (FR) cable with 6 sqmm (FR) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	455.00	454	451	451
1.12.2.5	1C-2x10 sqmm (FR) cable with 10 sqmm (FR) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.9 mm	Meter	682.00	680	677	677
1.12.2.6	1C-2x16 sqmm (FR) cable with 16 sqmm (FR) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm	Meter	1,080.00	1079	1076	1076
1.13	<u>SURFACE WIRING (ZERO HALOGEN)(THROUGH PVC CONDUIT)</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Surface conduit wiring with the following Zero Halogen polyolefine (BYA-LS Zero Halogen) and Zero Halogen polyolefine ECC wire connecting at both ends through PVC conduit of reputed manufacturer complete with 18 SWG GP sheet pull box with 3 mm thick ebonite sheet cover, fixing materials, other accessories etc. including mending the damages good as required. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standards along with relevant BDS standard as per detailed specification mentioned in Annexure-1 The work shall be carried out as per direction & approval of the Engineer In Charge					
1.13.1	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge					
1.13.1.1	1C-2x1.5 sqmm (Zero Halogen) cable with 1.5 sqmm (Zero Halogen) ECC wire through PVC pipe of minimum inner dia 20 mm having wall thickness of 1.5 mm	Meter	195.00	193	191	191
1.13.1.2	1C-2x2.5 sqmm (Zero Halogen) cable with 2.5 sqmm (Zero Halogen) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	268.00	267	264	264
1.13.1.3	1C-2x4.0 sqmm (Zero Halogen) cable with 4 sqmm (Zero Halogen) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	360.00	359	356	356
1.13.1.4	1C-2x6.0 sqmm (Zero Halogen) cable with 6 sqmm (Zero Halogen) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	476.00	475	472	472
1.13.1.5	1C-2x10 sqmm (Zero Halogen) cable with 10 sqmm (Zero Halogen) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.9 mm	Meter	742.00	741	738	738
1.13.1.6	1C-2x16 sqmm (Zero Halogen) cable with 16 sqmm (Zero Halogen) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm	Meter	1,153.00	1151	1148	1148
1.14	<u>SURFACE WIRING (NYY) (THROUGH PVC CONDUIT)</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Surface conduit wiring with the following PVC insulated and sheathed stranded cable (NYY) / XLPE insulated and PVC sheathed stranded cable (2XY) & PVC insulated Green / Yellow bi-colour ECC wire (BYA) through PVC conduit of reputed manufacturer complete with fixing materials, other accessories etc. as required including mending the damages good. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standards along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge.					
1.14.1	Cables manufactured by Govt. of Bangladesh owned / shared company ltd. (Eastern cables) approved by the Engineer In Charge.					
1.14.1.1	1C-4x2.5sqmm (NYY) with 2.5 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.9 mm	Meter	579.00	578	575	575
1.14.1.2	1C-4x4sqmm (NYY) with 4 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.9 mm	Meter	763.00	762	758	758
1.14.1.3	1C-4x6sqmm (NYY) with 6 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm	Meter	1,023.00	1022	1018	1018
1.14.1.4	1C-4x10sqmm (NYY) with 10 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm	Meter	1,382.00	1381	1376	1376
1.14.1.5	1C-4x16sqmm (NYY) with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm	Meter	2,092.00	2090	2086	2086
1.14.1.6	1C-4x25sqmm (NYY) with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 50 mm having wall thickness of 2.5 mm	Meter	2,973.00	2971	2966	2966
1.14.1.7	1C-4x35sqmm (NYY) with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 50 mm having wall thickness of 2.5 mm	Meter	3,823.00	3821	3816	3816
1.14.1.8	1C-4x50sqmm (NYY) with 25 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 65 mm having wall thickness of 2.9 mm	Meter	5,382.00	5380	5375	5375
1.14.1.9	1C-4x70sqmm (NYY) with 35 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 65 mm having wall thickness of 2.9 mm	Meter	7,387.00	7385	7380	7380
1.14.1.10	1C-4x95sqmm (NYY) with 50 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 75 mm having wall thickness of 3 mm	Meter	9,764.00	9761	9756	9756

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.14.1.11	1C-4x120sqmm (NYY) with 70 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 75 mm having wall thickness of 3 mm	Meter	12,540.00	12538	12532	12532
1.14.1.12	1C-4x150sqmm (NYY) with 70 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 100 mm having wall thickness of 3.4 mm	Meter	15,291.00	15289	15282	15282
1.14.1.13	1C-4x185sqmm (NYY) with 95 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 100 mm having wall thickness of 3.4mm	Meter	19,369.00	19367	19360	19360
1.14.1.14	1C-4x240sqmm (NYY) with 120 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 125 mm having wall thickness of 3.4 mm	Meter	24,862.00	24859	24851	24851
1.14.1.15	1C-4x300sqmm (NYY) with 120 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 125 mm having wall thickness of 3.4 mm	Meter	30,498.00	30495	30486	30486
1.14.1.16	1C-4x400sqmm (NYY) with 185 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 125 mm having wall thickness of 3.4 mm	Meter	39,999.00	39996	39987	39987
1.14.1.17	1C-4x500sqmm (NYY) with 240 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 150 mm having wall thickness of 4.5 mm	Meter	49,068.00	49064	49056	49056
1.14.1.18	1C-4x630sqmm (NYY) with 300 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 200 mm having wall thickness of 5.3 mm	Meter	62,334.00	62330	62322	62322
1.14.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge					
1.14.2.1	1C-4x2.5sqmm (NYY / 2XY) with 2.5 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	498.00	496	492	492
1.14.2.2	1C-4x4sqmm (NYY / 2XY) with 4 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.9 mm	Meter	641.00	639	636	636
1.14.2.3	1C-4x6sqmm (NYY / 2XY) with 6 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.9 mm	Meter	837.00	836	832	832
1.14.2.4	1C-4x10sqmm (NYY / 2XY) with 10 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm	Meter	1,237.00	1236	1231	1231
1.14.2.5	1C-4x16sqmm (NYY / 2XY) with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm	Meter	1,759.00	1757	1753	1753
1.14.2.6	1C-4x25sqmm (NYY / 2XY) with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 50 mm having wall thickness of 2.5 mm	Meter	2,513.00	2512	2507	2507
1.14.2.7	1C-4x35sqmm (NYY / 2XY) with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 50 mm having wall thickness of 2.5 mm	Meter	3,178.00	3177	3172	3172

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.14.2.8	1C-4x50sqmm (NYY / 2XY) with 25 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 65 mm having wall thickness of 3 mm.	Meter	4,386.00	4384	4379	4379
1.14.2.9	1C-4x70sqmm (NYY / 2XY) with 35 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 65 mm having wall thickness of 3 mm	Meter	6,060.00	6058	6052	6052
1.14.2.10	1C-4x95sqmm (NYY / 2XY) with 50 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 75 mm having wall thickness of 3 mm	Meter	8,014.00	8012	8007	8007
1.14.2.11	1C-4x120sqmm (NYY / 2XY) with 70 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 75 mm having wall thickness of 3 mm	Meter	10,015.00	10013	10008	10008
1.14.2.12	1C-4x150sqmm (NYY / 2XY) with 70 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 75 mm having wall thickness of 3 mm	Meter	12,272.00	12270	12264	12264
1.14.2.13	1C-4x185sqmm (NYY / 2XY) with 95 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 100 mm having wall thickness of 3.4 mm	Meter	15,117.00	15115	15109	15109
1.14.2.14	1C-4x240sqmm (NYY / 2XY) with 120 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 125 mm having wall thickness of 3.4 mm	Meter	19,888.00	19886	19876	19876
1.14.2.15	1C-4x300sqmm (NYY / 2XY) with 150 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 125 mm having wall thickness of 3.4 mm	Meter	24,397.00	24394	24385	24385
1.14.2.16	1C-4x400sqmm (NYY / 2XY) with 185 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 125 mm having wall thickness of 3.4 mm	Meter	31,784.00	31782	31772	31772
1.14.2.17	1C-4x500sqmm (NYY / 2XY) with 240 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 150 mm having wall thickness of 4.5 mm	Meter	39,528.00	39524	39516	39516
1.14.2.18	1C-4x630sqmm (NYY / 2XY) with 300 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 200 mm having wall thickness of 5.3 mm	Meter	49,973.00	49969	49961	49961

1.15 CONCEALED WIRING (BYM)

Concealed conduit wiring with following PVC insulated and sheathed stranded cable (BYM) & PVC insulated Green / Yellow bi- coloured ECC wire (BYA) through PVC conduit of reputed manufacturer complete with 18 SWG GP sheet pull box with 3mm thick ebonite sheet cover, fixing materials etc. as required including mending the damages good. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standards along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge.

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.15.1	Cables manufactured by Govt. of Bangladesh owned / shared company ltd. (Eastern cables) approved by the Engineer In Charge.					
1.15.1.1	1C-2x1.5sqmm (BYM) cable with 1.5sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 16 mm having wall thickness of 1.5 mm	Meter	230.00	228	223	223
1.15.1.2	1C-2x2.5sqmm(BYM) cable with 2.5sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 16 mm having wall thickness of 1.5 mm	Meter	305.00	304	299	299
1.15.1.3	1C-2x4.0 sqmm (BYM) cable with 4 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 20 mm having wall thickness of 1.5 mm	Meter	416.00	415	409	409
1.15.1.4	1C-2x6.0 sqmm (BYM) cable with 6 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	555.00	553	547	547
1.15.1.5	1C-2x10sqmm(BYM) cable with 10sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	797.00	795	788	788
1.15.1.6	1C-2x16 sqmm (BYM) cable with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.9 mm	Meter	1,179.00	1178	1171	1171
1.15.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge					
1.15.2.1	1C-2x1.5sqmm (BYM) cable with 1.5sqmm(BYA) ECC wire through PVC pipe of minimum inner dia 16 mm having wall thickness of 1.5 mm	Meter	214.00	213	208	208
1.15.2.2	1C-2x2.5sqmm (BYM) cable with 2.5sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 16 mm having wall thickness of 1.5 mm	Meter	268.00	266	261	261
1.15.2.3	1C-2x4.0 sqmm (BYM) cable with 4 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 20 mm having wall thickness of 1.5 mm	Meter	382.00	380	374	374
1.15.2.4	1C-2x6.0 sqmm (BYM) cable with 6 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	506.00	505	498	498
1.15.2.5	1C-2x10sqmm (BYM) cable with 10 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	727.00	726	718	718
1.15.2.6	1C-2x16 sqmm (BYM) cable with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.9 mm	Meter	1,075.00	1073	1067	1067
1.16	<u>CONCEALED WIRING (BYA)</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Concealed conduit wiring with the following PVC insulated stranded cable (BYA) & PVC insulated Green / Yellow bi-colour ECC wire (BYA) through PVC conduit of reputed manufacturer complete with 18 SWG GP sheet pull box with 3mm thick ebonite sheet cover, fixing materials, other accessories etc. as required including mending the damages good. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standards along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge.					
1.16.1	Cables manufactured by Govt. of Bangladesh owned / shared company ltd. (Eastern cables) approved by the Engineer In Charge.					
1.16.1.1	1C-2x1.5sqmm (BYA) cable with 1.5sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 16 mm having wall thickness of 1.5 mm	Meter	211.00	210	205	205
1.16.1.2	1C-2x2.5sqmm (BYA) cable with 2.5sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 16 mm having wall thickness of 1.5 mm	Meter	286.00	286	281	281
1.16.1.3	1C-2x4.0 sqmm (BYA) cable with 4 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 16 mm having wall thickness of 1.5 mm	Meter	398.00	397	391	391
1.16.1.4	1C-2x6.0 sqmm (BYA) cable with 6 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 20 mm having wall thickness of 1.5 mm	Meter	542.00	541	533	533
1.16.1.5	1C-2x10 sqmm (BYA) cable with 10 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 20 mm having wall thickness of 1.5 mm	Meter	773.00	771	765	765
1.16.1.6	1C-2x16 sqmm (BYA) cable with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	1,145.00	1144	1137	1137
1.16.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge					
1.16.2.1	1C-2x1.5sqmm (BYA) cable with 1.5sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 16 mm having wall thickness of 1.5 mm	Meter	199.00	198	193	193
1.16.2.2	1C-2x2.5sqmm (BYA) cable with 2.5sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 16 mm having wall thickness of 1.5 mm	Meter	251.00	250	245	245

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.16.2.3	1C-2x4.0 sqmm (BYA) cable with 4 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 16 mm having wall thickness of 1.5 mm	Meter	363.00	361	355	355
1.16.2.4	1C-2x6.0 sqmm (BYA) cable with 6 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 20 mm having wall thickness of 1.5 mm	Meter	485.00	484	478	478
1.16.2.5	1C-2x10 sqmm (BYA) cable with 10 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 20 mm having wall thickness of 1.5 mm	Meter	701.00	700	693	693
1.16.2.6	1C-2x16 sqmm (BYA) cable with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.7 mm	Meter	1,038.00	1036	1030	1030
1.17	<u>CONCEALED WIRING (NYY) (THROUGH PVC CONDUIT)</u> Concealed conduit wiring with the following PVC insulated and sheathed stranded cable (NYY) / XLPE insulated and PVC sheathed stranded cable (2XY) & PVC insulated Green / Yellow bi-colour ECC wire (BYA) through PVC conduit of reputed manufacturer complete with fixing materials other accessories etc. as required including mending the damages good. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standards along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge					
1.17.1	Cables manufactured by Govt. of Bangladesh owned / shared company ltd. (Eastern cables) approved by the Engineer In Charge.					
1.17.1.1	1C-4x2.5 sqmm (NYY) with 2.5 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.9 mm	Meter	617.00	615	608	608
1.17.1.2	1C-4x4 sqmm (NYY) with 4 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.9 mm	Meter	801.00	799	792	792
1.17.1.3	1C-4x6 sqmm (NYY) with 6 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm	Meter	1,067.00	1066	1059	1059
1.17.1.4	1C-4x10 sqmm (NYY) with 10 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm	Meter	1,506.00	1504	1496	1496
1.17.1.5	1C-4x16 sqmm (NYY) with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm	Meter	2,145.00	2143	2135	2135

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.17.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge					
1.17.2.1	1C-4x2.5 sqmm (NYY / 2XY) with 2.5 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.9 mm.	Meter	542.00	541	533	533
1.17.2.2	1C-4x4 sqmm (NYY / 2XY) with 4 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.9 mm	Meter	685.00	683	676	676
1.17.2.3	1C-4x6 sqmm (NYY / 2XY) with 6 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm.	Meter	938.00	936	929	929
1.17.2.4	1C-4x10 sqmm (NYY / 2XY) with 10 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm.	Meter	1,290.00	1288	1281	1281
1.17.2.5	1C-4x16 sqmm (NYY / 2XY) with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm.	Meter	1,889.00	1887	1879	1879
1.18	<u>UNDERGROUND WIRING (NYY)(THROUGH PVC PIPE)</u> Providing & laying of the following PVC insulated & sheathed cable (NYY) / (XLPE) insulated & PVC sheathed cable (2XY) with PVC insulated Green / Yellow bi-colour ECC wire (BYA) connecting at both ends, through PVC pipe & accessories in the following manner. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standards along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge In kutcha ground by cutting 45.70 cm width x 91.40 cm depth trench with necessary brick or tile protection and mending the damages good by refilling trench with proper compaction; In pucca floor through PVC pipe by cutting trench of necessary size and mending the damages good by brick soling, 75 mm (1:2:4) CC work with neat cement finishing etc.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.18.1	Cables manufactured by Govt. of Bangladesh owned / shared company ltd. (Eastern cables) approved by the Engineer In Charge.					
1.18.1.1	IC-2x1.5 sqmm (NYY) with 1.5 sqmm (BYA) ECC wire through the PVC pipe of minimum inner dia 20 mm & wall thickness 1.5 mm					
1.18.1.1.1	In kutcha ground	Meter	481.00	477	462	460
1.18.1.1.2	In pucca floor	Meter	741.00	735	716	712
1.18.1.2	IC-2x2.5 sqmm (NYY) with 2.5 sqmm (BYA) ECC wire through the PVC pipe of minimum inner dia 20 mm & wall thickness 1.5 mm					
1.18.1.2.1	In kutcha ground	Meter	552.00	548	533	532
1.18.1.2.2	In pucca floor	Meter	813.00	807	788	784
1.18.1.3	IC-2x4 sqmm (NYY) with 4 sqmm (BYA) ECC wire through the PVC pipe of minimum inner dia 25 mm & wall thickness 1.7 mm					
1.18.1.3.1	In kutcha ground	Meter	676.00	672	658	656
1.18.1.3.2	In pucca floor	Meter	937.00	931	912	907
1.18.1.4	IC-2x6 sqmm (NYY) with 6 sqmm (BYA) ECC wire through the PVC pipe of minimum inner dia 25 mm & wall thickness 1.7 mm					
1.18.1.4.1	In kutcha ground	Meter	803.00	799	784	782
1.18.1.4.2	In pucca floor	Meter	1,063.00	1057	1038	1034
1.18.1.5	IC-2x10 sqmm (NYY) with 10 sqmm (BYA) ECC wire through the PVC pipe of minimum inner dia 30 mm & wall thickness 1.9 mm					
1.18.1.5.1	In kutcha ground	Meter	1,076.00	1072	1058	1055
1.18.1.5.2	In pucca floor	Meter	1,336.00	1330	1311	1307
1.18.1.6	IC-2x16 sqmm (NYY) with 16 sqmm (BYA) ECC wire through the PVC pipe of minimum inner dia 40 mm & wall thickness 2.2 mm					
1.18.1.6.1	In kutcha ground	Meter	1,503.00	1498	1484	1482
1.18.1.6.2	In pucca floor	Meter	1,763.00	1757	1738	1734
1.18.1.7	IC-4x2.5 sqmm (NYY) with 2.5 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 30 mm & wall thickness of 1.9 mm					
1.18.1.7.1	In kutcha ground	Meter	780.00	776	762	761

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.18.1.7.2	In pucca floor	Meter	1,041.00	1035	1016	1012
1.18.1.8	1C-4x4 sqmm (NYY) with 4 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 30 mm & wall thickness of 1.9 mm					
1.18.1.8.1	In kutcha ground	Meter	964.00	960	946	943
1.18.1.8.2	In pucca floor	Meter	1,225.00	1219	1199	1195
1.18.1.9	1C-4x6 sqmm (NYY) with 6 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm & wall thickness of 2.2 mm					
1.18.1.9.1	In kutcha ground	Meter	1,224.00	1220	1206	1204
1.18.1.9.2	In pucca floor	Meter	1,485.00	1479	1460	1456
1.18.1.10	1C-4x10 sqmm (NYY) with 10 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm & wall thickness of 2.2 mm					
1.18.1.10.1	In kutcha ground	Meter	1,652.00	1648	1633	1632
1.18.1.10.2	In pucca floor	Meter	1,913.00	1906	1888	1884
1.18.1.11	1C-4x16 sqmm (NYY) with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm & wall thickness of 2.2 mm					
1.18.1.11.1	In kutcha ground	Meter	2,291.00	2287	2272	2270
1.18.1.11.2	In pucca floor	Meter	2,551.00	2546	2526	2523
1.18.1.12	1C-4x25 sqmm (NYY) with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 50 mm & wall thickness of 2.5 mm					
1.18.1.12.1	In kutcha ground	Meter	3,162.00	3158	3144	3142
1.18.1.12.2	In pucca floor	Meter	3,423.00	3417	3398	3394
1.18.1.13	1C-4x35 sqmm (NYY) with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 50 mm & wall thickness of 2.5 mm					
1.18.1.13.1	In kutcha ground	Meter	4,014.00	4010	3995	3994
1.18.1.13.2	In pucca floor	Meter	4,274.00	4268	4250	4246
1.18.1.14	1C-4x50 sqmm (NYY) with 25 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 65 mm & wall thickness of 3 mm					
1.18.1.14.1	In kutcha ground	Meter	5,674.00	5670	5656	5654
1.18.1.14.2	In pucca floor	Meter	5,935.00	5929	5909	5905

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.18.1.15	1C-4x70 sqmm (NYY) with 35 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 65 mm wall thickness of 3 mm					
1.18.1.15.1	In kutcha ground	Meter	7,537.00	7533	7519	7517
1.18.1.15.2	In pucca floor	Meter	7,798.00	7791	7773	7769
1.18.1.16	1C-4x95 sqmm (NYY) with 50 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 75 mm wall thickness of 3 mm					
1.18.1.16.1	In kutcha ground	Meter	9,931.00	9927	9911	9910
1.18.1.16.2	In pucca floor	Meter	10,191.00	10185	10166	10162
1.18.1.17	1C-4x120 sqmm (NYY) with 70 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 75 mm wall thickness of 3 mm					
1.18.1.17.1	In kutcha ground	Meter	12,578.00	12578	12578	12578
1.18.1.17.2	In pucca floor	Meter	12,959.00	12952	12934	12930
1.18.1.18	1C-4x150 sqmm (NYY) with 70 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 100 mm wall thickness of 3.4 mm					
1.18.1.18.1	In kutcha ground	Meter	15,331.00	15331	15331	15331
1.18.1.18.2	In pucca floor	Meter	15,879.00	15870	15843	15839
1.18.1.19	1C-4x185 sqmm (NYY) with 95 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 100 mm wall thickness of 3.4mm					
1.18.1.19.1	In kutcha ground	Meter	18,853.00	18853	18853	18853
1.18.1.19.2	In pucca floor	Meter	19,401.00	19391	19366	19360
1.18.1.20	1C-4x240 sqmm(NYY) with 120 sqmm (BYA) ECC wire through PVC pipe of minimum innerdia 125mm wall thickness 3.4 mm					
1.18.1.20.1	In kutcha ground	Meter	19,872.00	19872	19872	19872
1.18.1.20.2	In pucca floor	Meter	20,421.00	20412	20385	20381
1.18.1.21	1C-4x300 sqmm (NYY) with 150 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 125 mm wall thickness of 3.4 mm					
1.18.1.21.1	In kutcha ground	Meter	28,474.00	28473	28473	28473
1.18.1.21.2	In pucca floor	Meter	29,022.00	29013	28986	28982

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Rev

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.18.1.22	1C-4x400 sqmm (NYY) with 185 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 125 mm wall thickness of 3.4 mm					
1.18.1.22.1	In kutcha ground	Meter	39,989.00	39988	39988	39988
1.18.1.22.2	In pucca floor	Meter	40,537.00	40528	40501	40497
1.18.1.23	1C-4x500 sqmm (NYY) with 240 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 150 mm wall thickness of 4.5 mm					
1.18.1.23.1	In kutcha ground	Meter	49,063.00	49063	49063	49063
1.18.1.23.2	In pucca floor	Meter	49,878.00	49863	49825	49819
1.18.1.24	1C-4x630 sqmm (NYY) with 300 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 200 mm wall thickness of 5.3 mm					
1.18.1.24.1	In kutcha ground	Meter	62,336.00	62335	62335	62335
1.18.1.24.2	In pucca floor	Meter	63,150.00	63136	63097	63091
1.18.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge.					
1.18.2.1	IC-2x1.5 sqmm (NYY / 2XY) with 1.5 sqmm (BYA) ECC wire through the PVC pipe of minimum inner dia 20 mm & wall thickness 1.5 mm					
1.18.2.1.1	In kutcha ground	Meter	452.00	448	433	432
1.18.2.1.2	In pucca floor	Meter	711.00	705	687	682
1.18.2.2	IC-2x2.5 sqmm (NYY / 2XY) with 2.5 sqmm (BYA) ECC wire through the PVC pipe of minimum inner dia 20 mm & wall thickness 1.5 mm					
1.18.2.2.1	In kutcha ground	Meter	510.00	506	491	489
1.18.2.2.2	In pucca floor	Meter	769.00	763	744	740
1.18.2.3	IC-2x4 sqmm (NYY / 2XY) with 4 sqmm (BYA) ECC wire through the PVC pipe of minimum inner dia 25 mm & wall thickness 1.7 mm					
1.18.2.3.1	In kutcha ground	Meter	611.00	606	592	590
1.18.2.3.2	In pucca floor	Meter	870.00	863	845	841
1.18.2.4	IC-2x6 sqmm (NYY / 2XY) with 6 sqmm (BYA) ECC wire through the PVC pipe of minimum inner dia 25 mm & wall thickness 1.7 mm					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.18.2.4.1	In kutcha ground	Meter	726.00	722	707	706
1.18.2.4.2	In pucca floor	Meter	986.00	979	961	957
1.18.2.5	IC-2x10 sqmm (NYY / 2XY) with 10 sqmm (BYA) ECC wire through the PVC pipe of minimum inner dia 30 mm & wall thickness 1.9 mm					
1.18.2.5.1	In kutcha ground	Meter	957.00	953	938	936
1.18.2.5.2	In pucca floor	Meter	1,216.00	1211	1192	1188
1.18.2.6	IC-2x16 sqmm (NYY / 2XY) with 16 sqmm (BYA) ECC wire through the PVC pipe of minimum inner dia 40 mm & wall thickness 2.2 mm					
1.18.2.6.1	In kutcha ground	Meter	1,319.00	1314	1300	1299
1.18.2.6.2	In pucca floor	Meter	1,578.00	1572	1554	1550
1.18.2.7	1C-4x2.5 sqmm (NYY / 2XY) with 2.5 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.9 mm					
1.18.2.7.1	In kutcha ground	Meter	700.00	696	681	679
1.18.2.7.2	In pucca floor	Meter	959.00	954	934	930
1.18.2.8	1C-4x4 sqmm (NYY / 2XY) with 4 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 30 mm having wall thickness of 1.9 mm					
1.18.2.8.1	In kutcha ground	Meter	843.00	839	824	823
1.18.2.8.2	In pucca floor	Meter	1,102.00	1097	1078	1074
1.18.2.9	1C-4x6 sqmm (NYY / 2XY) with 6 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 1.9 mm					
1.18.2.9.1	In kutcha ground	Meter	1,089.00	1085	1071	1069
1.18.2.9.2	In pucca floor	Meter	1,349.00	1343	1324	1320
1.18.2.10	1C-4x10 sqmm (NYY / 2XY) with 10 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm					
1.18.2.10.1	In kutcha ground	Meter	1,437.00	1433	1418	1417
1.18.2.10.2	In pucca floor	Meter	1,697.00	1691	1672	1668
1.18.2.11	1C-4x16 sqmm (NYY / 2XY) with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 40 mm having wall thickness of 2.2 mm					
1.18.2.11.1	In kutcha ground	Meter	1,959.00	1955	1940	1938

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.18.2.11.2	In pucca floor	Meter	2,218.00	2212	2193	2189
1.18.2.12	1C-4x25 sqmm (NYY / 2XY) with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 50 mm having wall thickness of 2.5 mm					
1.18.2.12.1	In kutcha ground	Meter	2,704.00	2700	2684	2683
1.18.2.12.2	In pucca floor	Meter	2,963.00	2957	2938	2934
1.18.2.13	1C-4x35 sqmm (NYY / 2XY) with 16 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 50 mm having wall thickness of 2.5 mm					
1.18.2.13.1	In kutcha ground	Meter	3,370.00	3366	3351	3349
1.18.2.13.2	In pucca floor	Meter	3,629.00	3623	3604	3600
1.18.2.14	1C-4x50 sqmm (NYY / 2XY) with 25 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 65 mm having wall thickness of 2.9 mm					
1.18.2.14.1	In kutcha ground	Meter	4,680.00	4675	4661	4659
1.18.2.14.2	In pucca floor	Meter	4,939.00	4933	4914	4909
1.18.2.15	1C-4x70 sqmm (NYY / 2XY) with 35 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 65 mm having wall thickness of 2.9 mm					
1.18.2.15.1	In kutcha ground	Meter	6,211.00	6206	6192	6190
1.18.2.15.2	In pucca floor	Meter	6,470.00	6463	6445	6441
1.18.2.16	1C-4x95 sqmm (NYY / 2XY) with 50 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 75 mm having wall thickness of 3 mm					
1.18.2.16.1	In kutcha ground	Meter	8,183.00	8179	8163	8162
1.18.2.16.2	In pucca floor	Meter	8,442.00	8436	8417	8413
1.18.2.17	1C-4x120 sqmm (NYY / 2XY) with 70 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 75 mm having wall thickness of 3 mm					
1.18.2.17.1	In kutcha ground	Meter	10,175.00	10170	10156	10154
1.18.2.17.2	In pucca floor	Meter	10,434.00	10428	10409	10405
1.18.2.18	1C-4x150 sqmm (NYY / 2XY) with 70 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 100 mm having wall thickness of 3.4 mm					
1.18.2.18.1	In kutcha ground	Meter	12,434.00	12429	12415	12413
1.18.2.18.2	In pucca floor	Meter	12,861.00	12852	12826	12821

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.18.2.19	1C-4x185 sqmm (NYY / 2XY) with 95 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 100 mm having wall thickness of 3.4 mm					
1.18.2.19.1	In kutcha ground	Meter	15,257.00	15253	15238	15237
1.18.2.19.2	In pucca floor	Meter	15,684.00	15675	15649	15644
1.18.2.20	1C-4x240 sqmm (NYY / 2XY) with 120 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 125 mm having wall thickness of 3.4 mm					
1.18.2.20.1	In kutcha ground	Meter	19,994.00	19989	19974	19973
1.18.2.20.2	In pucca floor	Meter	20,421.00	20412	20385	20381
1.18.2.21	1C-4x300 sqmm (NYY / 2XY) with 150 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 125 mm having wall thickness of 3.4 mm					
1.18.2.21.1	In kutcha ground	Meter	24,502.00	24497	24483	24482
1.18.2.21.2	In pucca floor	Meter	24,929.00	24919	24894	24889
1.18.2.22	1C-4x400 sqmm (NYY / 2XY) with 185 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 125 mm having wall thickness of 3.4 mm					
1.18.2.22.1	In kutcha ground	Meter	31,896.00	31890	31876	31875
1.18.2.22.2	In pucca floor	Meter	32,322.00	32313	32287	32282
1.18.2.23	1C-4x500 sqmm (NYY / 2XY) with 240 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 150 mm having wall thickness of 4.5 mm					
1.18.2.23.1	In kutcha ground	Meter	39,658.00	39653	39639	39636
1.18.2.23.2	In pucca floor	Meter	40,351.00	40336	40298	40293
1.18.2.24	1C-4x630 sqmm (NYY / 2XY) with 300 sqmm (BYA) ECC wire through PVC pipe of minimum inner dia 200 mm having wall thickness of 5.3mm					
1.18.2.24.1	In kutcha ground	Meter	50,116.00	50110	50096	50095
1.18.2.24.2	In pucca floor	Meter	50,809.00	50795	50755	50750
1.19	<u>UNDERGROUND WIRING (NYY) (THROUGH GI PIPE)</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Providing & laying of the following PVC insulated & sheathed cable (NYY) / XLPE insulated & PVC sheathed cable (2XY) with PVC insulated Green / Yellow bi-coloured ECC wire (BYA) connecting at both ends, through GI pipe (National Tubes Ltd. made or equivalent) with necessary accessories in pucca ground / road by cutting 45.70cm width x 91.40 cm depth trench mending the damages good by earth refilling providing 38 mm thick compacted premix bituminous carpeting over one layer of flat brick soling and 75 mm thick compacted water bound macadam of khoa of brick. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE standards along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction & approval of the Engineer In Charge.					
1.19.1	Cables manufactured by Govt. of Bangladesh owned / shared company ltd. (Eastern cables) approved by the Engineer In Charge.					
1.19.1.1	1C-4x10 sqmm (NYY) with 10 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 40 mm.	Meter	3,085.00	3079	3048	3035
1.19.1.2	1C-4x16 sqmm (NYY) with 16 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 40 mm.	Meter	3,723.00	3718	3686	3674
1.19.1.3	1C-4x25 sqmm (NYY) with 16 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 50 mm.	Meter	4,742.00	4737	4705	4693
1.19.1.4	1C-4x35 sqmm (NYY) with 16 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 50 mm.	Meter	5,594.00	5589	5557	5545
1.19.1.5	1C-4x50 sqmm (NYY) with 25 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 65 mm.	Meter	7,776.00	7771	7739	7726
1.19.1.6	1C-4x70 sqmm (NYY) with 35 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 65 mm.	Meter	9,639.00	9634	9602	9590
1.19.1.7	1C-4x95 sqmm (NYY) with 50 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 75 mm.	Meter	12,086.00	12080	12049	12036
1.19.1.8	1C-4x120 sqmm (NYY) with 70 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 75 mm.	Meter	14,855.00	14850	14818	14805

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.19.1.9	1C-4x150 sqmm (NYY) with 70 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 100 mm.	Meter	18,225.00	18220	18188	18175
1.19.1.10	1C-4x185 sqmm (NYY) with 95 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 100 mm	Meter	21,746.00	21741	21709	21696
1.19.1.11	1C-4x240 sqmm (NYY) with 120 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 125 mm.	Meter	27,168.00	27163	27131	27119
1.19.1.12	1C-4x300 sqmm (NYY) with 150 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 125 mm.	Meter	32,804.00	32798	32766	32754
1.19.1.13	1C-4x400 sqmm (NYY) with 185 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 125 mm.	Meter	42,304.00	42298	42266	42254
1.19.1.14	1C-4x500 sqmm (NYY) with 240 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 150 mm.	Meter	51,302.00	51295	51264	51251
1.19.1.15	1C-4x630 sqmm (NYY) with 300 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 200 mm.	Meter	65,244.00	65237	65205	65193
1.19.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge					
1.19.2.1	1C-4x10 sqmm (NYY / 2XY) with 10 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 40 mm.	Meter	2,868.00	2863	2831	2819
1.19.2.2	1C-4x16 sqmm (NYY / 2XY) with 16 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 40 mm.	Meter	3,390.00	3384	3352	3340
1.19.2.3	1C-4x25 sqmm (NYY / 2XY) with 16 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 50 mm.	Meter	4,282.00	4277	4246	4233
1.19.2.4	1C-4x35 sqmm (NYY / 2XY) with 16 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 50 mm.	Meter	4,949.00	4943	4912	4899
1.19.2.5	1C-4x50 sqmm (NYY / 2XY) with 25 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 65 mm.	Meter	6,780.00	6775	6743	6731
1.19.2.6	1C-4x70 sqmm (NYY / 2XY) with 35 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 65 mm.	Meter	8,311.00	8306	8274	8262
1.19.2.7	1C-4x95 sqmm (NYY / 2XY) with 50 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 75 mm.	Meter	10,336.00	10331	10299	10287
1.19.2.8	1C-4x120 sqmm (NYY / 2XY) with 70 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 75 mm.	Meter	12,344.00	12339	12307	12295

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.19.2.9	1C-4x150 sqmm (NYY / 2XY) with 70 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 100 mm.	Meter	15,233.00	15228	15196	15184
1.19.2.10	1C-4x185 sqmm (NYY / 2XY) with 95 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 100 mm	Meter	18,058.00	18052	18020	18008
1.19.2.11	1C-4x240 sqmm (NYY / 2XY) with 120 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 125 mm.	Meter	22,231.00	22226	22194	22181
1.19.2.12	1C-4x300 sqmm (NYY / 2XY) with 150 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 125 mm.	Meter	26,730.00	26724	26692	26680
1.19.2.13	1C-4x400 sqmm (NYY / 2XY) with 185 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 125 mm.	Meter	34,125.00	34120	34088	34075
1.19.2.14	1C-4x500 sqmm (NYY / 2XY) with 240 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 150 mm.	Meter	41,811.00	41805	41773	41761
1.19.2.15	1C-4x630 sqmm (NYY / 2XY) with 300 sqmm (BYA) ECC wire through GI pipe of minimum inner dia 200mm.	Meter	52,922.00	52916	52885	52872

1.20 HT CABLE (XLPE)

Providing & laying of following sizes HT (11KV) PVC insulated, sheathed, screened & armoured cable (NYSEYFGbY) / HT (11KV) armoured XLPE Cable :
All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to IEC / BS / VDE along with relevant BDS standard as per detailed specification mentioned in Annexure-1. The work shall be carried out as per direction / approval / acceptance of the Engineer In Charge.

In kutchra ground by cutting 45.70 cm width x 91.40 cm depth trench with necessary brick or tile protection and mending the damages good by refilling trench with proper compaction.

In pucca floor through required size of PVC pipe cutting trench of necessary size and mending good the damages with one layer 1st class flat brick soling, 75 mm thick (1:2:4) cc work with neat cement finishing etc.

In pucca ground / road through required size of PVC pipe by cutting 45.70cm width x 91.40 cm depth trench mending good the damages by earth refilling with proper compaction providing 50 mm thick compacted premix bituminous carpeting over one layer of 1st class flat brick soling and 75 mm thick compacted water bound macadam of khoa of brick.

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.20.1	Cables manufactured by Govt. of Bangladesh owned / shared company ltd. (Eastern Cables) approved by the Engineer In Charge.					
1.20.1.1	<u>3Cx25 sqmm cable</u>					
1.20.1.1.1	In kutchha ground	Meter	5,069.00	5065	5048	5047
1.20.1.1.2	In pucca floor through 75 mm PVC pipe having wall thickness of 3 mm.	Meter	5,636.00	5630	5610	5606
1.20.1.1.3	In pucca ground / pucca road through 75 mm PVC pipe having wall thickness of 3 mm.	Meter	5,375.00	5371	5357	5354
1.20.1.2	<u>3C x 35 sqmm cable</u>					
1.20.1.2.1	In kutchha ground	Meter	5,891.00	5887	5871	5870
1.20.1.2.2	In pucca floor through 100mm PVC pipe having wall thickness of 3mm.	Meter	6,701.00	6695	6676	6672
1.20.1.2.3	In pucca ground / pucca road through 100 mm PVC pipe having wall thickness of 3.4 mm.	Meter	6,441.00	6437	6422	6420
1.20.1.3	<u>3C x 50 sqmm cable</u>					
1.20.1.3.1	In kutchha ground	Meter	7,342.00	7337	7323	7322
1.20.1.3.2	In pucca floor through 100mm PVC pipe having wall thickness of 3.4mm.	Meter	8,154.00	8148	8129	8125
1.20.1.3.3	In pucca ground / pucca road through 100 mm PVC pipe having wall thickness of 3.4 mm.	Meter	7,893.00	7889	7874	7873
1.20.1.4	<u>3C x 70 sqmm cable</u>					
1.20.1.4.1	In kutchha ground	Meter	8,957.00	8953	8937	8936
1.20.1.4.2	In pucca floor through 100mm PVC pipe having wall thickness of 3.4mm.	Meter	9,769.00	9762	9744	9740
1.20.1.4.3	In pucca ground / pucca road through 100 mm PVC pipe having wall thickness of 3.4 mm.	Meter	9,508.00	9504	9489	9488
1.20.1.5	<u>3C x 95 sqmm cable</u>					
1.20.1.5.1	In kutchha ground	Meter	11,069.00	11065	11050	11048
1.20.1.5.2	In pucca floor through 100mm PVC pipe having wall thickness of 3mm.	Meter	11,881.00	11875	11857	11853
1.20.1.5.3	In pucca ground / pucca road through 100 mm PVC pipe having wall thickness of 3.4 mm.	Meter	11,621.00	11616	11602	11601

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.20.1.6	<u>3C x 120 sqmm cable</u>					
1.20.1.6.1	In kutchra ground	Meter	13,012.00	13007	12993	12992
1.20.1.6.2	In pucca floor through 100mm PVC pipe having wall thickness of 3.4mm.	Meter	13,824.00	13818	13799	13795
1.20.1.6.3	In pucca ground / pucca road through 100 mm PVC pipe having wall thickness of 3.4 mm.	Meter	13,564.00	13560	13544	13543
1.20.1.7	<u>3C x 150 sqmm cable</u>					
1.20.1.7.1	In kutchra ground	Meter	15,486.00	15482	15467	15465
1.20.1.7.2	In pucca floor through 100mm PVC pipe having wall thickness of 3mm.	Meter	16,300.00	16294	16275	16271
1.20.1.7.3	In pucca ground / pucca road through 100 mm PVC pipe having wall thickness of 3.4 mm.	Meter	16,040.00	16036	16020	16019
1.20.1.8	<u>3C x 185 sqmm cable</u>					
1.20.1.8.1	In kutchra ground	Meter	17,993.00	17988	17974	17972
1.20.1.8.2	In pucca floor through 125mm PVC pipe having wall thickness of 3mm.	Meter	19,344.00	19338	19319	19315
1.20.1.8.3	In pucca ground / pucca road through 125 mm PVC pipe having wall thickness of 3.4 mm.	Meter	19,084.00	19079	19064	19063
1.20.1.8	<u>3C x 240sqmm cable</u>					
1.20.1.8.1	In kutchra ground	Meter	19,787.00	19783	19765	19764
1.20.1.8.2	In pucca floor through 125mm PVC pipe having wall thickness of 3.4mm.	Meter	21,086.00	21080	21061	21057
1.20.1.8.3	In pucca ground / pucca road through 125 mm PVC pipe having wall thickness of 3.4 mm.	Meter	20,826.00	20821	20806	20805
1.20.2	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer In Charge.					
1.20.2.1	<u>3Cx25 sqmm XLPE cable</u>					
1.20.2.1.1	In kutchra ground	Meter	3,308.00	3308	3308	3308
1.20.2.1.2	In pucca floor through 75 mm PVC pipe having wall thickness of 3 mm.	Meter	4,199.00	4193	4175	4171
1.20.2.1.3	In pucca ground / pucca road through 75 mm PVC pipe having wall thickness of 3 mm.	Meter	3,939.00	3935	3920	3919

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.20.2.2	<u>3C x 35 sqmm XLPE cable</u>					
1.20.2.2.1	In kutchra ground	Meter	4,275.00	4271	4256	4255
1.20.2.2.2	In pucca floor through 100mm PVC pipe having wall thickness of 3.4mm.	Meter	5,085.00	5079	5061	5056
1.20.2.2.3	In pucca ground / pucca road through 100 mm PVC pipe having wall thickness of 3.4 mm.	Meter	4,825.00	4821	4806	4805
1.20.2.3	<u>3C x 50 sqmm XLPE cable</u>					
1.20.2.3.1	In kutchra ground	Meter	5,182.00	5178	5162	5161
1.20.2.3.2	In pucca floor through 100mm PVC pipe having wall thickness of 3.4mm.	Meter	5,994.00	5988	5969	5965
1.20.2.3.3	In pucca ground / pucca road through 100 mm PVC pipe having wall thickness of 3.4 mm.	Meter	5,733.00	5729	5714	5713
1.20.2.4	<u>3C x 70 sqmm XLPE cable</u>					
1.20.2.4.1	In kutchra ground	Meter	6,528.00	6524	6510	6508
1.20.2.4.2	In pucca floor through 100mm PVC pipe having wall thickness of 3.4mm.	Meter	7,340.00	7334	7315	7311
1.20.2.4.3	In pucca ground / pucca road through 100 mm PVC pipe having wall thickness of 3.4 mm.	Meter	7,080.00	7076	7061	7059
1.20.2.5	<u>3C x 95 sqmm XLPE cable</u>					
1.20.2.5.1	In kutchra ground	Meter	7,883.00	7883	7883	7883
1.20.2.5.2	In pucca floor through 100mm PVC pipe having wall thickness of 3.4mm.	Meter	8,968.00	8963	8943	8939
1.20.2.5.3	In pucca ground / pucca road through 100 mm PVC pipe having wall thickness of 3.4 mm.	Meter	8,708.00	8704	8689	8687
1.20.2.6	<u>3C x 120 sqmm XLPE cable</u>					
1.20.2.6.1	In kutchra ground	Meter	9,635.00	9630	9615	9614
1.20.2.6.2	In pucca floor through 100mm PVC pipe having wall thickness of 3.4mm.	Meter	10,448.00	10442	10423	10419
1.20.2.6.3	In pucca ground / pucca road through 100 mm PVC pipe having wall thickness of 3.4 mm.	Meter	10,188.00	10184	10168	10167
1.20.2.7	<u>3C x 150 sqmm XLPE cable</u>					
1.20.2.7.1	In kutchra ground	Meter	11,389.00	11385	11370	11369
1.20.2.7.2	In pucca floor through 100mm PVC pipe having wall thickness of 3.4mm.	Meter	12,204.00	12198	12179	12174
1.20.2.7.3	In pucca ground / pucca road through 100 mm PVC pipe having wall thickness of 3.4 mm.	Meter	11,944.00	11939	11925	11923

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.20.2.8	<u>3C x 185 sqmm XLPE cable</u>					
1.20.2.8.1	In kutcha ground	Meter	13,493.00	13489	13475	13473
1.20.2.8.2	In pucca floor through 125mm PVC pipe having wall thickness of 3.4mm.	Meter	14,845.00	14839	14820	14816
1.20.2.8.3	In pucca ground / pucca road through 125 mm PVC pipe having wall thickness of 3.4 mm.	Meter	14,585.00	14580	14566	14564
1.20.2.9	<u>3C x 240 sqmm XLPE cable</u>					
1.20.2.9.1	In kutcha ground	Meter	16,921.00	16916	16900	16898
1.20.2.9.2	In pucca floor through 125mm PVC pipe having wall thickness of 3.4mm.	Meter	18,013.00	18007	17992	17990
1.20.2.9.3	In pucca ground / pucca road through 150 mm PVC pipe having wall thickness of 3.4 mm.	Meter	18,013.00	18008	17991	17990
1.21	<u>TELECOMMUNICATION CABLE</u>					
	Supplying and drawing of following sizes PVC insulated & sheathed twisted pair telecommunication cables having dia of each core is 0.6 mm through prelaidd pipes.					
1.21.1	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) approved / accepted by the Engineer In Charge.					
1.21.1.1	1C-2x0.282 sqmm (1 pair)	Meter	23.00	24	24	24
1.21.1.2	1C-4x0.282 sqmm (2 pair)	Meter	35.00	35	35	35
1.21.1.3	1C-6x0.282 sqmm (3 pair)	Meter	50.00	49	49	49
1.21.1.4	1C-8x0.282 sqmm (4 pair)	Meter	69.00	69	69	69
1.21.1.5	1C-10x0.282 sqmm (5 pair)	Meter	82.00	82	82	82
1.21.1.6	1C-12x0.282 sqmm (6 pair)	Meter	98.00	99	99	99
1.21.1.7	1C-16x0.282 sqmm (8 pair)	Meter	124.00	124	124	124
1.21.1.8	1C-20x0.282 sqmm (10 pair)	Meter	154.00	154	154	154
1.21.1.9	1C-40x0.282 sqmm (20 pair)	Meter	288.00	288	288	288
1.21.1.10	1C-60x0.282 sqmm (30 pair)	Meter	419.00	419	419	419
1.21.1.11	1C-80x0.282 sqmm (40 pair)	Meter	544.00	544	544	544
1.21.1.12	1C-100x0.282 sqmm (50 pair)	Meter	689.00	690	690	690

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.22	<u>CO-AXIAL CABLE</u>					
	Supplying & drawing of following sizes PVC insulated & sheathed 75 ohm impedance co-axial cables through pre-laid pipes.					
1.22.1	Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc) approved/accepted by the Engineer In Charge.					
1.22.1.1	4 / C	Meter	51.00	50	50	50
1.22.1.2	5 / C	Meter	61.00	61	61	61
1.22.1.3	6 / C	Meter	79.00	79	79	79
1.22.1.4	RG-11	Meter	115.00	115	115	115
1.23	<u>CABLE / SOCKET / FERULES</u>					
	Supply and fixing of copper made sockets / ferules for following size cables (need to be shown voltage rating.)					
1.23.1	16 sqmm	Each	69.00	69	69	69
1.23.2	25 sqmm	Each	82.00	81	81	81
1.23.3	35 sqmm	Each	107.00	107	107	107
1.23.4	50 sqmm	Each	122.00	122	122	122
1.23.5	70 sqmm	Each	137.00	137	137	137
1.23.6	95 sqmm	Each	149.00	149	149	149
1.23.7	120 sqmm	Each	215.00	215	215	215
1.23.8	150 sqmm	Each	263.00	263	263	263
1.23.9	185 sqmm	Each	363.00	363	363	363
1.23.10	240 sqmm	Each	527.00	527	527	527
1.23.11	300 sqmm	Each	713.00	713	713	713
1.23.12	400 sqmm	Each	1,019.00	1018	1018	1018
1.23.13	500 sqmm	Each	1,261.00	1261	1261	1261
1.23.14	630 sqmm	Each	1,780.00	1780	1780	1780
1.24	<u>CABLE TRENCH</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Making following cable trench in pucca floor having 76.2 mm (3") thick CC (4:2:1) base on one layer of flat brick soling over 76.2 mm (3") thick sand bedding at the bottom, 127 mm (5") thick brick work (4:1) at the sides complete with 12.7 mm (1/2") plaster and neat cement finishing duly covered with 4.8 mm (3/16") thick MS sheet having necessary lifting lugs :					
1.24.1	W (width) – 457 mm x D (depth) – 864 mm	Meter	7,143.00	7123	6996	6968
1.24.2	W (width) – 610 mm x D (depth) – 864 mm	Meter	8,213.00	8190	8049	8018
1.24.3	W (width) – 762 mm) x D (depth) – 864 mm	Meter	9,294.00	9268	9113	9078
1.24.4	W (width) – 913 mm x D (depth) – 864 mm	Meter	10,042.00	10021	9871	9834
1.25	<u>PVC PIPE</u>					
	Providing & laying of following PVC pipe (best quality PVC pipe of reputed manufacturer) embedded in wall / column / ceiling / floor etc. with all accessories, 18 SWG GP sheet pull box with 3 mm thick ebonite sheet cover, fixing materials etc. as required including mending the damages good.					
1.25.1	Minimum inner dia 12 mm & minimum wall thickness 1.5 mm.	Meter	34.00	34	34	34
1.25.2	Minimum inner dia 20 mm & minimum wall thickness 1.5 mm.	Meter	52.00	51	51	51
1.25.3	Minimum inner dia 25 mm & minimum wall thickness 1.7 mm.	Meter	69.00	69	69	69
1.25.4	Minimum inner dia 30 mm & minimum wall thickness 1.9 mm.	Meter	95.00	95	95	95
1.25.5	Minimum inner dia 40 mm & minimum wall thickness 2.2 mm.	Meter	153.00	153	153	153
1.25.6	Minimum inner dia 50 mm & minimum wall thickness 2.5 mm.	Meter	238.00	238	238	238
1.25.7	Minimum inner dia 65 mm & minimum wall thickness 2.9 mm.	Meter	353.00	353	353	353
1.25.8	Minimum inner dia 75 mm & minimum wall thickness 3 mm.	Meter	404.00	404	404	404
1.25.9	Minimum inner dia 100 mm & minimum wall thickness 3.4mm	Meter	631.00	631	631	631
1.25.10	Minimum inner dia 125mm&minimum wall thickness 3 mm.	Meter	1,198.00	1198	1198	1198
1.25.11	Minimum inner dia 150mm&minimum wall thickness 4.5 mm	Meter	1,279.00	1278	1278	1278
1.25.12	Minimum inner dia 200mm&minimum wall thickness 5.3mm	Meter	1,879.00	1880	1880	1880
1.26	<u>LOOP CABLE</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply and fixing of loop cable of this following sizes : Cable manufacturer(s) must have valid type test certificate (within last seven years) from internationally accredited laboratory (like CPRI, KEMA etc.) accepted / approved by the Engineer In Charge.					
1.26.1	<u>From transformer to LT switchgear</u>					
	(without ECC & conduit)					
1.26.1.1	1C - 4 x 16 sqmm (NYY)	Meter	1,320.00	1319	1317	1317
1.26.1.2	1C - 4 x 25 sqmm (NYY)	Meter	2,031.00	2030	2025	2025
1.26.1.3	1C - 4 x 35 sqmm (NYY)	Meter	2,697.00	2695	2691	2691
1.26.1.4	1C - 4 x 50 sqmm (NYY)	Meter	3,773.00	3772	3766	3766
1.26.1.5	1C - 4 x 70 sqmm (NYY)	Meter	5,146.00	5145	5140	5140
1.26.1.6	1C - 4 x 95 sqmm (NYY)	Meter	6,860.00	6858	6853	6853
1.26.1.7	1C - 4 x 120 sqmm (NYY)	Meter	8,543.00	8540	8535	8535
1.26.1.8	1C - 4 x 150 sqmm (NYY)	Meter	10,608.00	10606	10600	10600
1.26.1.9	1C - 4 x 185 sqmm (NYY)	Meter	13,064.00	13061	13055	13055
1.26.1.10	1C - 4 x 240 sqmm (NYY)	Meter	16,909.00	16906	16898	16898
1.26.1.11	1C - 4 x 300 sqmm (NYY)	Meter	20,941.00	20938	20929	20929
1.26.1.12	1C - 4 x 400 sqmm (NYY)	Meter	27,774.00	27771	27762	27762
1.26.1.13	1C - 4 x 500 sqmm (NYY)	Meter	34,565.00	34563	34553	34553
1.26.1.14	1C - 4 x 630 sqmm (NYY)	Meter	43,475.00	43472	43463	43463
1.26.2	<u>From LT switchgear to PFI plant</u>					
	(without neutral, ECC and conduit)					
1.26.2.1	1C - 3 x 16 sqmm (NYY)	Meter	991.00	990	988	988
1.26.2.2	1C - 3 x 25 sqmm (NYY)	Meter	1,551.00	1550	1545	1545
1.26.2.3	1C - 3 x 35 sqmm (NYY)	Meter	2,050.00	2048	2044	2044
1.26.2.4	1C - 3 x 50 sqmm (NYY)	Meter	2,862.00	2860	2855	2855
1.26.2.5	1C - 3 x 70 sqmm (NYY)	Meter	3,891.00	3890	3885	3885
1.26.2.6	1C - 3 x 95 sqmm (NYY)	Meter	5,183.00	5182	5176	5176
1.26.2.7	1C - 3 x 120 sqmm (NYY)	Meter	6,448.00	6446	6440	6440
1.26.2.8	1C - 3 x 150 sqmm (NYY)	Meter	7,999.00	7997	7991	7991
1.26.2.9	1C - 3 x 185 sqmm (NYY)	Meter	9,847.00	9845	9838	9838
1.26.2.10	1C - 3 x 240 sqmm (NYY)	Meter	12,743.00	12740	12732	12732

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.26.2.11	1C - 3 x 300 sqmm (NYY)	Meter	15,768.00	15765	15756	15756
1.26.2.12	1C - 3 x 400 sqmm (NYY)	Meter	20,897.00	20894	20885	20885
1.26.2.13	1C - 3 x 500 sqmm (NYY)	Meter	25,990.00	25987	25978	25978
1.26.2.14	1C - 3 x 630 sqmm (NYY)	Meter	32,675.00	32673	32663	32663
1.27	<u>ROAD CARPETING</u> Providing following finished bituminous carpeting by preparing bitumen mixture of 19mm (3 / 4") under graded size shingles, 2.5 F.M Sylhet sand and 1.5 F.M. local sand in 0.56:4:2:1 proportion in asphalt plant at 176°C-190°C (350°F-375°F) temperature and the same to be spread by paver, finisher machine over a bitumen tack coat of 1 Kg per sq. meter after sweeping and cleaning the road surface and making proper compaction and slope by using 10-12 ton static road roller (3 wheel), 8-10 ton static road roller (2 wheel) and vibrating road roller (9 wheel) machines including nominal seal coat and supplying all required materials accepted / approved by the Engineer In Charge.					
1.27.1	25 mm (1") average thickness	Sqm	617.00	618	618	618
1.27.2	38 mm (1.5") average thickness	Sqm	926.00	926	926	926
1.27.3	50 mm (2") average thickness	Sqm	1,235.00	1234	1234	1234
1.28	<u>INSULATING TAPE</u> Supply and fixing of PVC insulating tape. (UK / JAPAN or equivalent brand accepted / approved by the Engineer In Charge)					
1.28.1	¾ " width PVC insulation tape (Nitto) (10 yards per reel)	Each	25.00	26	26	26
1.28.2	¾ " width PIB tape (25m per reel)	Each	290.00	290	290	290
1.28.3	1" width PIB tape (25 m per reel)	Each	353.00	354	354	354

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Subhead-2.1

Substation & Related Works

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.1	HT (11 KV) SWITCHGEAR Supply of 11 KV, 3-phase, 50 Hz, indoor type, high tension switchgear complete with Load Break Switch (LBS), 800 A hard-drawn electrolytic copper bus-bars, 1 No. 0-15 KV range digital voltmeter & 1 no. digital ammeter of adequate ranges both with selector switch, 1 no. of panel heater with auto thermostat control switch, manual ON & OFF push button switch and indicators including following components such as LBS, HR.C fuse, CT, PT shall be manufactured & tested as per NEMA / VDE / IEC / JIS / BS Standards along with relevant BDS standard assembled locally in 14 SWG sheet steel clad, dust & vermin proof, free standing, floor mounting, epoxy resin powder coat painted cabinet as per relevant IEC standards and as per accepted / approved by the Engineer-in-charge. Panel board is provided with capacitive information level and all types of danger sign. All doors of panel board are connected by ECC with earthing bus bar. In case of 630 KVA or above capacity sub-station, the switchgear panel shall have to be furnished with audible alarm & auxiliary relays for sensing signals from buchholz relay and operation of HT switchgear. CT Ratio (to be chosen as per capacity):- For 100-150 KVA transformer 10/5 For 200-250 KVA transformer 15/5 For 300-315 KVA transformer 20/5 For 400 KVA transformer 25/5 For 500 KVA transformer 30/5					
2.1.1.1	With LBS (Load Break Switch) 1 Set of 11 KV, 630 A (36KA), 50 Hz, triple pole, manually operated off load isolator interlocked with earth switch.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	1 Set of 11 KV, 630A (36KA), 50 Hz, spring charged, stored energy mechanism triple pole load break switch (LBS) complete with 3 no's of 11 KV HR.C fuse of suitable Amps. (25KA) with spring operated striker pin plunger for automatic tripping activated by any of the three fuses blow-up. 2 Nos. of 11 KV, double pole, cast resin insulated, dry type Potential transformer (P.T.) having ratio 11/0.11, 50VA, class 0.5 for metering. 3 Nos. of 11 KV, cast resin insulated, dry type, single core Current transformer (C.T.) having adequate current ratio (compatible with the transformer capacity) burden 10-15VA of class 0.5 M5 for metering. 1 No of 415V, 6A (10 KA), 50 Hz. TPMCB for PT secondary protection. Assembled by the valid ISO-9001 certified company having test certificate (within at least 5 years) according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	414,271.00	414,271.00	414,271.00	414,271.00
2.1.1.2	With withdrawable type VCB (vacuum circuit breaker)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply of 11 KV, 3-phase, 50 Hz, indoor type, high tension switchgear complete with Vacuum Circuit Breaker, 800 A hard-drawn electrolytic copper bus-bars, 1 No 0-15 KV range voltmeter & 1 no. ammeter of adequate range both with selector switch, 1 no. of panel heater with auto thermostat control switch, manual ON & OFF push button switch and ON-OFF-TRIP indicators including following components such as VCB, CT, PT, microprocessor controlled IDMT relay shall be manufactured as per NEMA / VDE / IEC / JIS / BS standards along with BDS IEC 60076, PART 1: 2016 shall have test certificate (within 5 years) according to relevant IEC standard assembled locally in 14 SWG sheet steel metal clad, dust & vermin proof, free standing, floor mounting, epoxy resin powder coat painted cabinet as per relevant IEC standards and as per accepted / approved by the Engineer-in-charge. Panel board is provided with capacitive information level and all types of danger sign. All doors of panel board are connected by ECC with earthing bus bar. In case of 630 KVA or above capacity sub-station, the switchgear panel shall have to be furnished with audible alarm & auxiliary relays for sensing signals from buchholz relay and operation of HT switchgear. CT Ratio (to be chosen as per capacity) :- For 500 KVA transformer 30/5/5 For 630 KVA transformer 40/5/5 For 800 KVA transformer 50/5/5 For 1000 KVA transformer 60/5/5 For 1250 KVA transformer 70/5/5 For 1500 KVA transformer 80/5/5 For 2000 KVA transformer 110/5/5 With withdrawable type VCB (vacuum circuit breaker)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	1 Set of 11KV, 630 Amps (36KA), 3-phase, 50 Hz, trolley mounted fully withdrawable type Vacuum Circuit Breaker complete with motor operated spring charged stored energy mechanism for auto tripping at 12 / 24 / 48 / 110 volts D.C (without battery) . 2 Nos. 11 KV, cast resin insulated, dry type; double pole PT having ratio 11/0.11, burden 50VA, class 0.5 for metering & protection. 3 Nos. 11 KV cast resin insulated, dry type, double core CT of adequate current ratio (compatible with the transformer capacity), burden 10-15 VA, first core of class 0.5 M5 for metering and second core of class 10P10 for protection. 1 No of Triple pole solid-state microprocessor control IDMT relay with 2 elements of over current and short circuit protection and one for earth fault protection. 1 No. 415V, 6A (10KA) TPMCB for PT secondary protection. . Assembled by the valid ISO-9001 certified company having test certificate (within at least 5 years) according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	1,082,653.00	1,082,653.00	1,082,653.00	1,082,653.00

2.1.2 11 KV RMU (RING MAIN UNIT)

Providing & supply of following metal clad / metal enclosed 11 KV, 3 phase, 50Hz, indoor type high tension double incoming and following number outgoing ring main unit (switchgear) made of sheet steel clad, dust and vermin proof, free standing floor mounting indoor type HT switchgear panel with 800 A, 3 phase hard drawn electrolytic copper bus bars incoming & outgoing both shall have common individual bus bar and all internal wiring and comprising of:

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	INCOMING FEEDER (both VCB are interlocked) 11 KV, 31.5KA, 800 A, 3-phase, 50 Hz. metal clad trolley mounted fully withdrawable type vacuum circuit breaker complete with OFF load isolator for each incomer, 1no PT, motor operated spring charged stored energy mechanism for auto tripping at 12/24/48/110 volts DC (without battery) maximum service voltage 12 KV short circuit making current 50 KA having 4 NO+ 4 NC auxiliary contacts, capacitor compensated shunt tripping coil, closing solenoid. . 1 No. Cast resin insulated, double pole, Potential Transformer, ratio: 11/11 KV, Class 0.5, 50 VA, (in open delta connection). 1 No. MCB of adequate rating for PT Secondary Protection. 3 Nos. Cast resin insulated, 11 KV dry type double cores CT with ratio adequate rating 1st core for metering, 2nd for protection. Core 1: 10 VA, Class 0.5M5 Core 2: 15 VA, Class 10P10. OUTGOING FEEDER 11 KV, 31.5KA, 800 A, 3-phase, 50Hz, metal clad trolley mounted fully withdrawable type vacuum circuit breaker complete with motor operated spring charged stored energy mechanism for auto tripping at 12/24/48/110 volts DC (without battery) maximum service voltage 12 KV short circuit making current 50 KA having 4 NO+ 4 NC auxiliary contacts, capacitor compensated shunt tripping coil, closing solenoid.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	1(set) Cast resin insulated, double pole, potential transformer, ratio: 11/11 KV, Class 0.5, 50 VA, (in open delta connection).					
	1 No. MCB of adequate rating for PT secondary protection.					
	3 Nos. Cast resin insulated, 11 KV dry type double core CT with ratio adequate rating 1st core for metering, 2nd for protection Core 1:10VA, class 0.5M5 core 2:15 VA, class 10P10					
	3 Nos. Ammeter, adequate rating 1 No Voltmeter, 0-15 KV, with selector switch.					
	1 No. Triple pole solid state microprocessor operated IDMT relay with 2 (two) over current and 1 (one) earth fault protection element with standard settings.					
	2 Nos. ON and OFF push Button. 3 No's indicating lamps ON and OFF/TRIP 1 No. Panel heater.					
2.1.2.1	Incoming - 2	Each	3,642,683.00	3,642,683.00	3,642,683.00	3,642,683.00
	Outgoing - 2					
2.1.2.2	Incoming - 2	Each	4,550,674.00	4,550,674.00	4,550,674.00	4,550,674.00
	Outgoing - 3					
2.1.2.3	Incoming - 2	Each	5,458,665.00	5,458,665.00	5,458,665.00	5,458,665.00
	Outgoing - 4					
2.1.2.4	Incoming - 2	Each	6,366,656.00	6,366,656.00	6,366,656.00	6,366,656.00
	Outgoing - 5					
2.1.2.5	Incoming - 2	Each	7,274,647.00	7,274,647.00	7,274,647.00	7,274,647.00
	Outgoing - 6					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.2.6	Incoming - 2 Outgoing - 7	Each	8,182,638.00	8,182,638.00	8,182,638.00	8,182,638.00
2.1.3	SINGLE PHASE TRANSFORMER Supply of following oil-immersed, natural air cooled, 1-phase, 50-Hz, 6.35 KV / 0.24 KV outdoor type distribution transformer having percentage impedance 3-3.5%, basic insulation level (BIL) 75 KV, HT & LV porcelain bushings, transformer tank, oil inlet & outlet valves, earthing terminals, data plate etc. including painting, suitable for connection with 11 KV line at 40°C ambient temperature with maximum temperature rise 60°C, manufactured and tested as per NEMA / VDE / IEC / BS standard along with BDS IEC 60076, PART 1: 2016 as per accepted / approved by the Engineer-in-charge. Manufactured by Govt. of BANGLADESH owned / shared company or the valid ISO-9001 certified company having test certificate (within at least five years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.					
2.1.3.1	(a) Capacity : 5 KVA (b) No load loss : 50 watts (maximum) (c) Full load loss : 160 watts (maximum)	Each	51,579.00	51,579.00	51,579.00	51,579.00
2.1.3.2	(a) Capacity : 10 KVA (b) No load loss : 70 watts (maximum) (c) Full load loss : 200 watts (maximum)	Each	73,144.00	73,144.00	73,144.00	73,144.00
2.1.3.3	(a) Capacity : 15 KVA (b) No load loss : 80 watts (maximum) (c) Full load loss : 275 watts (maximum)	Each	87,142.00	87,142.00	87,142.00	87,142.00
2.1.3.4	(a) Capacity : 25 KVA (b) No load loss : 125 watts (maximum) (c) Full load loss : 375 watts (maximum)	Each	121,318.00	121,318.00	121,318.00	121,318.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.4	<u>OIL TYPE TRANSFORMER</u>					
	Supply of following oil-immersed, natural air cooled, 3-phase, 50-Hz, 11KV/0.415 KV & 0.24 KV indoor/outdoor type distribution transformer of DYN11 vector group complete with two windings of high conductivity copper having basic impulse insulation level 75 KV, dielectric strength 28 KV (for 1 min), HT & LV porcelain bushings, manual 5 position (0, $\pm 2.5\%$, $\pm 5\%$) standard tap changer, conservator, thermometer, oil inlet & outlet valves, oil level indicator, dehydrating breather, lifting lugs, earthing terminals, wheel, rating and diagram nameplate etc. including painting, suitable for operation at 40°C ambient temperature with maximum temperature rise 60°C, locally manufactured and tested as per NEMA / VDE / IEC / BS standards along with BDS IEC 60076, PART 1 : 2016 as per accepted/approved by the Engineer-in-charge.					
2.1.4.1	(a) Capacity : 50 KVA (b) No load loss : 250 watts (maximum) (c) Full load loss : 1200 watts (maximum) (d) Percentage impedance : 4% @ $\pm 10\%$ at 75°C					
2.1.4.1.1	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	272,317.00	272,317.00	272,317.00	272,317.00
2.1.4.2	(a) Capacity: 100 KVA (b) No load loss : 300 watts (maximum) (c) Full load loss : 1750 watts (maximum) (d) Percentage Impedance : 4% @ $\pm 10\%$ at 75°C					
2.1.4.2.1	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	373,658.00	373,658.00	373,658.00	373,658.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.4.3	(a) Capacity : 150 KVA (b) No load loss : 350 watts (maximum) (c) Full load loss : 2400 watts (maximum) (d) Percentage impedance : 4% @ ±10% at 75°C					
2.1.4.3.1	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	495,269.00	495,269.00	495,269.00	495,269.00
2.1.4.4	(a) Capacity : 200 KVA (b) No load loss : 500 watts (maximum) (c) Full load loss : 2800 watts (maximum) (d) Percentage impedance : 4% @ ±10% at 75°C					
2.1.4.4.1	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	576,342.00	576,342.00	576,342.00	576,342.00
2.1.4.5	(a) Capacity : 250 KVA (b) No load loss : 750 watts (maximum) (c) Full load loss : 4900 watts (maximum) (d) Percentage impedance : 4% @ ±10% at 75°C					
2.1.4.5.1	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	667,550.00	667,550.00	667,550.00	667,550.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.4.6	(a) Capacity : 300/315 KVA (b) No load loss : 800watts (maximum) (c) Full load loss : 5000 watts (maximum) (d) Percentage impedance : 4% @ ±10% at 75°C					
2.1.4.6.1	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	768,892.00	768,892.00	768,892.00	768,892.00
2.1.4.7	(a) Capacity : 400 KVA (b) No load loss : 850 watts (maximum) (c) Full load loss : 5200 watts (maximum) (d) Percentage impedance : 4% @ ±10% at 75°C					
2.1.4.7.1	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	953,209.00	953,209.00	953,209.00	953,209.00
2.1.4.8	(a) Capacity : 500 KVA (b) No load loss : 1000 watts (maximum) (c) Full load loss : 5800 watts (maximum) (d) Percentage impedance : 4% @ ±10% at 75°C					
2.1.4.8.1	Manufactured by Govt. of BANGLADESH owned / shared company (GEMCO. Ltd.) or the valid ISO-9001 certified company having type test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from any internationally accredited independent laboratory.	Each	1,459,595.00	1,459,595.00	1,459,595.00	1,459,595.00
2.1.4.8.2	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	1,099,032.00	1,099,032.00	1,099,032.00	1,099,032.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.4.9	(a) Capacity: 600 / 630 KVA with buchholz relay. (b) No load loss : 1200 watts (maximum) (c) Full load loss : 7500 watts (maximum) (d) Percentage impedance : 4% @ $\pm 10\%$ at 75°C					
2.1.4.9.1	Manufactured by Govt. of BANGLADESH owned / shared company (GEMCO. Ltd.) or the valid ISO-9001 certified company having type test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from any internationally accredited independent laboratory.	Each	1,665,596.00	1,665,596.00	1,665,596.00	1,665,596.00
2.1.4.9.2	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	1,337,868.00	1,337,868.00	1,337,868.00	1,337,868.00
2.1.4.10	(a) Capacity: 800 KVA with buchholz relay. (b) No load loss : 1400 watts (maximum) (c) Full load loss : 9000 watts (maximum) (d) Percentage impedance : 5% @ $\pm 10\%$ at 75°C					
2.1.4.10.1	Manufactured by Govt. of BANGLADESH owned / shared company or the valid ISO-9001 certified company having type test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from any internationally accredited independent laboratory.	Each	2,071,354.00	2,071,354.00	2,071,354.00	2,071,354.00
2.1.4.10.2	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	1,730,517.00	1,730,517.00	1,730,517.00	1,730,517.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.4.11	(a) Capacity: 1000 KVA with buchholz relay. (b) No load loss : 1800 watts (maximum) (c) Full load loss : 12000 watts (maximum) (d) Percentage impedance : 5% @ ±10% at 75°C					
2.1.4.11.1	Manufactured by Govt. of BANGLADESH owned / shared company or the valid ISO-9001 certified company having type test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from any internationally accredited independent laboratory.	Each	2,448,423.00	2,448,423.00	2,448,423.00	2,448,423.00
2.1.4.11.2	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	1,977,119.00	1,977,119.00	1,977,119.00	1,977,119.00
2.1.4.12	(a) Capacity: 1250 KVA with buchholz relay. (b) No load loss : 2000 watts (maximum) (c) Full load loss : 15000 watts (maximum) (d) Percentage impedance : 5% @ ±10% at 75°C					
2.1.4.12.1	Manufactured by Govt. of BANGLADESH owned / shared company or the valid ISO-9001 certified company having type test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from any internationally accredited independent laboratory.	Each	2,947,818.00	2,947,818.00	2,947,818.00	2,947,818.00
2.1.4.12.2	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	2,348,544.00	2,348,544.00	2,348,544.00	2,348,544.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.4.13	(a) Capacity: 1500 / 1600 KVA with buchholz relay. (b) No load loss : 2200 watts (maximum) (c) Full load loss : 18000 watts (maximum) (d) Percentage impedance : 6% @ ±10% at 75°C					
2.1.4.13.1	Manufactured by Govt. of BANGLADESH owned / shared company or the valid ISO-9001 certified company having type test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from any internationally accredited independent laboratory.	Each	3,197,515.00	3,197,515.00	3,197,515.00	3,197,515.00
2.1.4.13.2	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	2,826,090.00	2,826,090.00	2,826,090.00	2,826,090.00
2.1.4.14	(a) Capacity: 2000 KVA with buchholz relay. (b) No load loss : 2400 watts (maximum) (c) Full load loss : 20000 watts (maximum) (d) Percentage impedance : 6% @ ±10% at 75°C					
2.1.4.14.1	Manufactured by Govt. of BANGLADESH owned / shared company or the valid ISO-9001 certified company having type test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from any internationally accredited independent laboratory.	Each	4,246,245.00	4,246,245.00	4,246,245.00	4,246,245.00
2.1.4.14.2	Manufactured by the valid ISO-9001 certified company having test certificate (within 5 years) for the required or higher capacity of transformer according to relevant IEC standards from BUET /RUET/ CUET / KUET /DUET/ MIST.	Each	3,515,880.00	3,515,880.00	3,515,880.00	3,515,880.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.5	<u>DRY TYPE TRANSFORMER</u>					
	Supply of following dry type cast resin, natural air cooled, 3-phase, 50Hz, 11KV / 0.415 KV & 0.24 KV indoor type distribution transformer of DYN11 vector group having basic impulse insulation level 75 KV, HV & LV bushings, manual 5 position standard tap changer, complete with two windings of high conductivity aluminum foil with insulation material in class H, earthing terminals, temperature sensor with thermometer, thermostat controlled blower fan (if required), lifting lugs, data plate etc. complete as required with maximum 60°C temperature rise and suitable for operation at 40°C ambient temperature, at 75°C full load loss & impedance condition manufactured & type tested as per NEMA / IEC / VDE / BS / JIS standard along with BDS IEC 60076, PART 1: 2016 standards as per approval / acceptance by the Engineer-in-charge.					
2.1.5.1	(a) Capacity : 800 KVA (b) No load loss : 1700 watts (maximum) (c) Full load loss : 7600 watts (maximum) (d) Percentage impedance : 5% @ ±10% at 75°C	Each	2,293,938.00	2,293,938.00	2,293,938.00	2,293,938.00
2.1.5.2	(a) Capacity : 1000 KVA (b) No load loss : 2000 watts (maximum) (c) Full load loss : 8700 watts (maximum) (d) Percentage impedance : 5% @ ±10% at 75°C	Each	3,103,563.00	3,103,563.00	3,103,563.00	3,103,563.00
2.1.5.3	(a) Capacity : 1250 KVA (b) No load loss : 2300 watts (maximum) (c) Full load loss : 10500 watts (maximum) (d) Percentage impedance : 5% @ ±10% at 75°C	Each	3,608,003.00	3,608,003.00	3,608,003.00	3,608,003.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.5.4	(a) Capacity: 1500 / 1600 KVA. (b) No load loss : 2800 watts (maximum) (c) Full load loss : 13500 watts (maximum) (d) Percentage impedance : 6% @ $\pm 10\%$ at 75°C	Each	4,102,669.00	4,102,669.00	4,102,669.00	4,102,669.00
2.1.5.5	(a) Capacity: 2000 KVA (b) No load loss: 3500 watts (Maximum) (c) Full load loss: 16000 watts (Maximum) (d) Percentage Impedance : 6% @ $\pm 10\%$ at 75°C	Each	4,695,700.00	4,695,700.00	4,695,700.00	4,695,700.00
2.1.5.6	(a) Capacity: 2500 KVA. (b) No load loss : 3600 watts (maximum) (c) Full load loss : 19500 watts (maximum) (d) Percentage impedance : 6% @ $\pm 10\%$ at 75°C	Each	5,512,262.00	5,512,262.00	5,512,262.00	5,512,262.00
2.1.5.7	(a) Capacity : 3000/3150 KVA (b) No load loss : 4400 watts (maximum) (c) Full load loss : 24400 watts (maximum) (d) Percentage impedance : 7% @ $\pm 10\%$ at 75°C	Each				
			6,261,354.00	6,261,354.00	6,261,354.00	6,261,354.00
2.1.6	<u>ENCLOSURE FOR CAST RESIN TRANSFORMER:</u> The purpose of the enclosure is to provide safety from live parts, protect and make the equipment suitable for indoor conditions, prevent ingress of foreign matters, rodents, snakes etc. The material of enclosure used is CRCA sheet steel MS. The complete structure is rigid and self-supporting. To remove heat from the transformer, its louver has sufficient heat dissipation capability in indoor condition through the year without any additional cooling arrangements. The degree of ingress protection should not be less than IP 21 and fully enclosed type for indoor use:					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.6.1	Enclosure (for 100 KVA – 250 KVA dry-type transformer)	Each	157,637.00	157,637.00	157,637.00	157,637.00
2.1.6.2	Enclosure (for 315 KVA – 500 KVA dry-type transformer)	Each	189,165.00	189,165.00	189,165.00	189,165.00
2.1.6.3	Enclosure (for 630 KVA – 800 KVA dry-type transformer)	Each	220,692.00	220,692.00	220,692.00	220,692.00
2.1.6.4	Enclosure (for 1000 KVA – 2000 KVA dry-type transformer)	Each	283,747.00	283,747.00	283,747.00	283,747.00
2.1.6.5	Enclosure (for 2500 KVA – 4000 KVA dry-type transformer)	Each	346,802.00	346,802.00	346,802.00	346,802.00
2.1.7	<u>LT SWITCHGEAR</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply of 415 V, 3-phase, 50 Hz, indoor type low tension switch-gear of following specification complete with digital voltmeter (0-500V) & ammeter of adequate rating both with selector switch, indicating lamps for ON-OFF and following components (components such as TPMCCBs shall be manufactured according to NEMA / VDE / IEC / JIS / BS standards along with relevant BDS standard shall have type test certificate (within 5 years) according to relevant IEC Standard) assembled locally in 14 SWG sheet steel metal clad, dust & vermin proof, free standing, floor mounting, epoxy resin powder coat painted cabinet as per relevant IEC standards and as per accepted / approved by the Engineer-in-charge. Panel board is provided with capacitive information level and all types of danger sign. All doors of panel board are connected by ECC with earthing bus bar. Assembled by the valid ISO-9001 certified company having test certificate (within at least five years) according to relevant IEC standards from BUET / RUET / CUET / KUET / DUET / MIST. circuit Breaker equivalent accepted / approved by the Engineer-in-charge.					
2.1.7.1	For 100 KVA transformer					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	INCOMING 1 Set- 415V, 200 amps. TP&NE hard drawn electrolytic copper bus bar. 1 No. - 415V, 150 / 160 Amps (25KA), adjustable type TPMCCB for main control with thermal overload & instantaneous electro-magnetic short circuit release. 3 Nos. - 415V, 200 / 5 ratio current transformer with suitable accuracy & burden. OUTGOING 3 Nos. - 415V, 100A (16KA) TPMCCB with thermal over load & instantaneous electromagnetic short-circuit release. (one for PFI Control) 1 No. - 415V, 32 / 30A (16KA) TPMCCB with thermal over load & instantaneous electromagnetic short circuit release.	Each	190,775.00	190,775.00	190,775.00	190,775.00
2.1.7.2	For 150 KVA transformer					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	INCOMING 1 Set- 415V, 300A TP&NE hard drawn electrolytic copper bus bar. 1 No. - 415V, 250A (36KA), adjustable type TPMCCB for main control with thermal overload & instantaneous electro-magnetic short circuit release. 3 Nos. - 415V, 250/5 ratio current transformer with suitable accuracy & burden. OUTGOING 2 Nos. - 415V, 150/160A (25KA), adjustable type TPMCCB with thermal overload & instantaneous electromagnetic short-circuit release (one for PFI control). 1 Nos. - 415V, 100A (16KA), TPMCCB with thermal overload & instantaneous electromagnetic short circuit release 1 Nos. - 415V, 60/63A (16KA) TPMCCB with thermal over load & instantaneous electro-magnetic short-circuit release. 1 No. - 415V, 30 / 32A (16KA) TPMCCB with thermal over load & instantaneous electromagnetic short-circuit release.	Each	226,052.00	226,052.00	226,052.00	226,052.00
2.1.7.3	For 200 KVA transformer: INCOMING 1 Set- 415V, 400 amps. TP&NE hard drawn electrolytic copper bus bar 1 No. - 415V, 300 / 320 Amps (36KA), adjustable type TPMCCB for main control with thermal overload & instantaneous electromagnetic short circuit release. 3 no.s-415V, 300/5 ratio current transformer with suitable accuracy & burden.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	OUTGOING					
	1 No. - 415V, 200A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electromagnetic short circuit release (for PFI control).					
	1 No. - 415V, 150/160 (25KA) adjustable type TPMCCB with thermal overload & instantaneous electromagnetic short circuit release					
	2 Nos. - 415V, 100A (25KA) TPMCCB with thermal over current & instantaneous electromagnetic short circuit release.					
	1 No. - 415V, 60/63A (16KA), TPMCCB with thermal overload & instantaneous electromagnetic short-circuit release.					
	1 No. - 415V, 30/32A (16KA) TPMCCB with thermal overload & instantaneous electromagnetic short-circuit release.					
		Each	267,983.00	267,983.00	267,983.00	267,983.00
2.1.7.4	For 250 KVA transformer :					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	INCOMING 1 Set- 415V, 500 amps. TP&NE hard drawn electrolytic copper bus bar. 1 No. - 400 Amps (36KA), adjustable type TPMCCB for main control with thermal overload & instantaneous electro-magnetic short circuit release. 3 Nos. - 415V, 400/5 ratio current transformer with suitable accuracy & burden. OUTGOING 1 No. - 415V, 250A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short-circuit & release (for PFI control). 2 Nos. - 415V, 150 / 160A (25KA) adjustable type TPMCCB with thermal overload & instantaneous electromagnetic short circuit & release. 2 Nos. - 415V, 100A (16KA) TPMCCB with thermal overload & instantaneous electromagnetic short-circuit & release. 1 No. - 415V, 60 / 63A (16KA) TPMCCB with thermal overload & instantaneous electromagnetic short-circuit & release. 1 No. - 415V, 30/32A (16KA) TPMCCB with thermal overload & instantaneous electromagnetic short-circuit & release.	Each	315,905.00	315,905.00	315,905.00	315,905.00
2.1.7.5	For 300 / 315 KVA transformer : INCOMING 1 Set - 415V, 600 amps TP&NE hard drawn electrolytic copper bus bar. 1 No. - 415V, 500 Amps (36KA), adjustable type TPMCCB for main control with thermal overload & instantaneous electro-magnetic short circuit release. 3 Nos. - 415V, 500/5 ratio current transformer with suitable accuracy & burden.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	OUTGOING					
	1 No. - 415V, 300A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electromagnetic short circuit release (For PFI Control).					
	1 No. - 415V, 250A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 200A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 150 / 160A (25KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 60/63A (16KA) TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 30 / 32A (16KA) TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
		Each	348,851.00	348,851.00	348,851.00	348,851.00
2.1.7.6	For 400 KVA transformer:					
	INCOMING					
	1 Set - 415V, 800A TP&NE hard drawn electrolytic copper bus bar.					
	1 No. - 415V, 600 / 630A (36KA), adjustable type TPMCCB for main control with thermal overload & instantaneous electro-magnetic short circuit release.					
	3 No's. - 415V, 600/5 ratio current transformer with suitable accuracy & burden.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	OUTGOING					
	1 No. - 415V, 400A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release (for PFI Control).					
	1 No. - 415V, 250A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	2 Nos. - 415V, 200A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 150 / 160A (25KA) TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release					
	1 No. - 415V, 60 / 63A (16KA) TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release					
	1 No. - 415V, 30 / 32A (16KA) TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release					
		Each	435,710.00	435,710.00	435,710.00	435,710.00
2.1.7.7	For 500 KVA transformer:					
	INCOMING					
	1 Set - 415V, 1000 amps TP&NE hard drawn electrolytic copper bus bar.					
	1 No. - 415V, 800 Amps (50KA), adjustable type TPMCCB for main control with thermal overload & instantaneous electro-magnetic short circuit release.					
	3 Nos. - 415V, 800/5 ratio current transformer with suitable accuracy & burden.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	OUTGOING					
	1 No.-415V, 500 Amps (36KA), adjustable type TPMCCB for main control with thermal overload & instantaneous electro-magnetic short circuit release (for PFI control).					
	2 Nos. - 415V, 250A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	2 Nos. - 415V, 200A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 150 / 160A (25KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 60 / 63A (16KA) 415V TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 30 / 32A (16KA) 415V TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
		Each	594,104.00	594,104.00	594,104.00	594,104.00
2.1.7.8	For 600 / 630 KVA transformer:					
	INCOMING					
	1 Set - 415V, 1200A, TP&NE hard drawn electrolytic copper bus bar.					
	1 No. - 415V, 1000A (65KA), adjustable type ACB for main control with thermal overload & instantaneous electro-magnetic short circuit release.					
	3 No's - 415V, 1000/5 ratio current transformer with suitable accuracy & burden.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	OUTGOING					
	1 No. - 415V, 600A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release (for PFI control).					
	3 Nos. - 415V, 250A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	2 Nos. - 415V, 200A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 150/160A (25KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 100A (16KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 30 / 32A (16KA) 415V TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
		Each	783,710.00	783,710.00	783,710.00	783,710.00
2.1.7.9	For 800 KVA transformer:					
	INCOMING					
	1 Set - 415V, 1500 amps TP&NE hard drawn electrolytic copper bus bar.					
	1 No. - 415V, 1200/1250 Amps (65KA), adjustable type ACB for main control with thermal overload & instantaneous electro-magnetic short circuit release.					
	3 Nos. - 415V, 1200/5 ratio current transformer with suitable accuracy & burden.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	OUTGOING					
	1 No. - 415V, 800A (50KA) adjustable type TPMCCB with instantaneous electro-magnetic short circuit release (for PFI control).					
	2 Nos. - 415V, 300 / 320A (36KA) adjustable type TPMCCB with instantaneous electro-magnetic short circuit release.					
	4 Nos. - 415V, 250A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 150/160A (25KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 30 / 32A (16KA) TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
		Each	899,920.00	899,920.00	899,920.00	899,920.00
2.1.7.10	For 1000 KVA transformer					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	INCOMING 1 Set- 415V, 1800 TP & NE hard drawn electrolytic copper bus bar. 1 No. - 415V, 1600A (65KA), adjustable type ACB for main control overload & instantaneous electro-magnetic short circuit release. 3 Nos. - 415V, 1600 / 5 ratio current transformer with suitable accuracy & burden. OUTGOING 1 No. - 415V, 1000A (65 KA) adjustable type ACB with thermal overload & instantaneous electro-magnetic short circuit release (for PFI control). 2 Nos. - 415V, 300 / 320A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release. 6 Nos. - 415V, 250A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release. 1 No. - 415V, 100A (16KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release. 1 No. - 415V, 30 / 32A (16KA) TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.	Each	1,397,234.00	1,397,234.00	1,397,234.00	1,397,234.00
2.1.7.11	For 1250 KVA transformer INCOMING 1 Set- 415V, 2500A TP & NE hard drawn electrolytic copper bus bar. 1 No. - 415V, 2000A (65KA), adjustable type ACB for main control overload & instantaneous electro-magnetic short circuit release. 3 Nos. - 415V, 2000 / 5 ratio current transformer with suitable accuracy & burden.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	OUTGOING					
	1 No. - 415V, 1250A (65KA) adjustable type ACB with instantaneous electro-magnetic short circuit release. (For PFI control).					
	1 No. - 415V, 400A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	3 Nos. - 415V, 300 /320A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	4 Nos. - 415V, 250A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	2 Nos. - 415V, 200A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 80A (16KA) TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 30 / 32A (16KA) TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
		Each	1,586,840.00	1,586,840.00	1,586,840.00	1,586,840.00
2.1.7.12	For 1500 / 1600 KVA Transformer					
	INCOMING					
	1 Set - 415V, 3000 amps TP&NE hard drawn electrolytic copper bus bar.					
	1 No. - 415V, 2200A (65KA), adjustable type ACB for main control with thermal overload & instantaneous electro-magnetic short circuit release.					
	3 Nos. - 415V, 2500/5 ratio current transformer with suitable accuracy & burden.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	OUTGOING					
	1 No. - 415V, 1600A (65KA) adjustable type ACB with instantaneous electro-magnetic short circuit release (for PFI control).					
	1 No. - 415V, 600A (36KA) adjustable type TPMCCB with instantaneous electro-magnetic short circuit release.					
	2 Nos. - 415V, 400A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	4 Nos. - 415V, 300/320A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 250A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	2 Nos. - 415V, 200A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 100A (16KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
	1 No. - 415V, 30/32A (16KA) TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.					
		Each	1,788,679.00	1,788,679.00	1,788,679.00	1,788,679.00
2.1.7.13	For 2000 KVA transformer					
	INCOMING					
	1 Set. - 415V, 3200A TP & NE hard drawn electrolytic copper bus bar.					
	1 No. - 415V, 3000A (65KA), adjustable type ACB for main control with thermal overload & instantaneous electro-magnetic short circuit release.					
	3 Nos. - 415V, 3000 / 5 ratio current transformer with suitable accuracy & burden.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	OUTGOING : 1 No. - 415V, 2000A (65KA) adjustable type ACB with instantaneous electro-magnetic short circuit release. (for PFI control). 2 Nos. - 415V, 600A (36KA) adjustable type TPMCCB with instantaneous electro-magnetic short circuit release. 4 Nos. - 415V, 400A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release. 4 Nos. - 415V, 300/320A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release. 1 No. - 415V, 250A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release. 1 No. - 415V, 200A (36KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release. 1 No. - 415V, 30/32A (16KA) TPMCCB with thermal overload & instantaneous electromagnetic short circuit release.	Each	2,430,893.00	2,430,893.00	2,430,893.00	2,430,893.00
2.1.8	<u>POWER FACTOR IMPROVEMENT PANEL (PFI)</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply of following 415 volt, 3 phase, 50 Hz power factor improvement panel complete with TP bus bars and earth block, microprocessor controlled auto power factor correction relay with digital PF reading display, capacitor bank, contactor, fuse, ON indicators for every stage of capacitor bank (except directly connected one) etc. shall be manufactured & tested as per NEMA / VDE / IEC / JIS / BS standards along with relevant BDS standard assembled locally in 16 SWG sheet steel clad dust & vermin proof, free standing, floor mounting, epoxy resin powder coat painted cabinet as per relevant IEC standards and as per accepted / approved by the Engineer-in-charge. Assembled by the valid ISO-9001 certified company having test certificate (within five years) according to relevant IEC standards from BUET / RUET / CUET / KUET / DUET / MIST. 2.1.8.1 For 100 KVA transformer (PFI capacity - 60 KVAR) 3 Nos. - 415V, 150A hard drawn electrolytic copper bus bar. 1 No. - 415V, 2.5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge coil for connection directly with line through fuse. 1 No. - 415V, 2.5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 1 No. - 415V, 5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 5 No. - 415V, 10 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 2 No. - 415V, 10 A 50 Hz auto TP magnetic contactor with AC3 duty. 5 Nos. - 415V, 16 A, 50 Hz auto TP magnetic contactor with AC3 duty. 9 Nos. - 415V, 10 A HR.C fuse with base. 15 Nos. - 415V, 20 A HR.C fuse with base.	Each	170,879.00	170,879.00	170,879.00	170,879.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.8.2	For 150 KVA transformer (PFI capacity - 90 KVAR) 3 Nos. - 415V, 200A hard drawn electrolytic copper bus bar. 1 No. - 415V, 2.5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge coil for connection directly with line through fuse. 1 No. - 415V, 2.5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 1 No. - 415V, 5 KVAR, 50 Hz TP power capacitor bank with built in/separate discharge resistor. 1 No. - 415V, 5 KVAR, 50 Hz TP power capacitor bank with built in/separate discharge resistor. 6 Nos. - 415V, 12.5 KVAR, 50 Hz TP power capacitor bank with built in/separate discharge resistor. 3 Nos. - 415V, 10 A 50 Hz TP magnetic contactor with AC3 duty. 6 Nos. - 415V, 20 A 50 Hz TP magnetic contactor with AC3 duty. 9 Nos. - 415V, 10 A HR.C fuse with base. 18 Nos. - 415V, 25 A HR.C fuse with base.	Each	200,830.00	200,830.00	200,830.00	200,830.00
2.1.8.3	For 200 KVA transformer (PFI capacity - 120 KVAR)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	3 Nos. - 415V, 250A hard drawn electrolytic copper bus bar. 1 No. - 415V, 2.5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge coil for connection directly with line through fuse. 1 No. - 415V, 2.5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 1 No. - 415V, 5 KVAR, 50 Hz TP power capacitor bank with built-in discharge resistor. 3 Nos. - 415V, 10 KVAR, 50 Hz TP power capacitor bank with built in discharge resistor. 4 Nos. - 415V, 20 KVAR 50 Hz TP power capacitor bank with built in discharge resistor. 2 Nos. - 415V, 10A 50 Hz TP magnetic contactor with AC3 duty. 3 Nos. - 415V, 16A 50 Hz TP magnetic contactor with AC3 duty. 4 Nos. - 415V, 32A 50 Hz TP magnetic contactor with AC3 duty. 9 Nos. - 415V, 10A HR.C fuses with base. 9 Nos. 415V, 20A HR.C fuses with base. 12 Nos. - 415V, 40A HR.C fuses with base.	Each	233,177.00	233,177.00	233,177.00	233,177.00
2.1.8.4	For 250 KVA transformer (PFI capacity - 150 KVAR) 3 Nos. - 415V, 300A hard drawn electrolytic copper bus bar. 1 No. - 415V, 2.5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge coil for connection directly with line through fuse.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	1 No. - 415V, 2.5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor.					
	2 Nos. - 415V, 10 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor.					
	4 Nos. - 415V, 12.5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor.					
	3 Nos. - 415V, 25 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor.					
	7 Nos. - 415V, 20 A 50 Hz auto TP magnetic contactor with AC3 duty.					
	3 Nos. - 415V, 40 A 50 Hz auto TP magnetic contactor with AC3 duty.					
	24 Nos. - 415V, 25 A HR.C fuse with base.					
	9 Nos. - 415V, 50 A HR.C fuse with base					
		Each	278,703.00	278,703.00	278,703.00	278,703.00
2.1.8.5	For 300 / 315 KVA transformer (PFI capacity - 187.5 KVAR)					
	3 No's- 415V, 400A hard drawn electrolytic copper bus bar.					
	1 No. - 415V, 2.5 KVAR, 50 Hz TP power capacitor bank with built in/ separate discharge coil for connection directly with line through fuse.					
	1 No. - 415V, 2.5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor.					
	1 No. - 415V, 5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor.					
	4 Nos. - 415V, 10 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor.					
	3 Nos. - 415V, 12.5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor.					
	4 Nos. - 415V, 25 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor.					
	6 Nos. - 415V, 20A 50 Hz TP magnetic contactor with AC3 duty.					
	7 Nos. - 415V, 40A 50 Hz TP magnetic contactor with AC3 duty.					
	22 Nos. - 415V, 25A HR.C fuse with base.					
	20 Nos. - 415V, 50A HR.C fuse with base.					
		Each	326,625.00	326,625.00	326,625.00	326,625.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.8.6	For 400 KVA transformer (PFI capacity - 240 KVAR) 3 Nos. - 415V, 500A hard drawn electrolytic copper bus bar. 1 No. - 415V, 2.5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge coil for connection directly with line through fuse. 1 No. - 415V, 2.5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor 3 Nos. - 415V, 5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 2 Nos. - 415V, 10 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 4 Nos. - 415V, 25 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 2 Nos. - 415V, 50 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 1 No. - 415V, 10 A 50 Hz auto TP magnetic contactor with AC3 duty. 4 Nos. - 415V, 16 A 50 Hz auto TP magnetic contactor with AC3 duty. 5 Nos. - 415V, 40 A 50 Hz auto TP magnetic contactor with AC3 duty. 2 Nos. - 415V, 80 A 50 Hz auto TP magnetic contactor with AC3 duty. 6 Nos. - 415V, 16 A HR.C fuse with base. 15 Nos. - 415V, 20 A HR.C fuse with base. 12 Nos. - 415V, 50 A HR.C fuse with base. 6 Nos. - 415V, 100 A HR.C fuse with base.	Each	386,527.00	386,527.00	386,527.00	386,527.00
2.1.8.7	For 500 KVA transformer (PFI capacity - 300 KVAR)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	3 Nos. - 415V, 600A hard drawn electrolytic copper bus bar. . 1 No. - 415V, 2.5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge coil for connection directly with line through fuse. 1 No. - 415V, 2.5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 3 Nos. - 415V, 5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 3 Nos. - 415V, 10 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 4 Nos. - 415V, 25 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 3 Nos. - 415V, 50 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 1 No. - 415V, 16 A 50 Hz TP magnetic contactor with AC3 duty. 6 Nos. - 415V, 20 A 50 Hz TP magnetic contactor with AC3 duty. 4 Nos. - 415V, 40 A 50 Hz TP magnetic contactor with AC3 duty. 3 Nos. - 415V, 80 A 50 Hz TP magnetic contactor with AC3 duty. 9 Nos. - 415V, 16 A HR.C fuse with base. 12 Nos. - 415V, 25 A HR.C fuse with base. 15 Nos. - 415V, 50 A HR.C fuse with base. 9 Nos. - 415V, 100 Amp HR.C fuse with base.	Each	447,690.00	447,690.00	447,690.00	447,690.00
2.1.8.8	For 600 / 630 KVA transformer (PFI capacity - 375 KVAR)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	4 Nos. - 415V, 750A hard drawn electrolytic copper bus bar. 1 No. - 415V, 5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge coil for connection directly with line through fuse. 2 Nos. - 415V, 5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 1 No. - 415V, 10 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 2 Nos. - 415V, 12.5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 3 Nos. - 415V, 25 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 5 Nos. - 415V, 50 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 2 No. - 415V, 16 A 50 Hz auto TP magnetic contactor with AC3 duty. 3 No. - 415V, 20 A 50 Hz auto TP magnetic contactor with AC3 duty. 3 No. - 415V, 40 A 50 Hz auto TP magnetic contactor with AC3 duty. 5 Nos. - 415V, 80 A 50 Hz auto TP magnetic contactor with AC3 duty. 18 Nos. - 415V, 25 A HR.C fuse with base. 9 Nos. - 415V, 50 A HR.C fuse with base. 15 Nos. - 415V, 100 A HR.C fuse with base.	Each	536,534.00	536,534.00	536,534.00	536,534.00
2.1.8.9	For 800 KVA transformer (PFI capacity - 480 KVAR)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	3 Nos. - 415V, 900A hard drawn electrolytic copper bus bar.					
	1 No. - 415V, 25 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge coil for connection directly with line through fuse.					
	4 Nos. - 415V, 25 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor.					
	1 Nos. - 415V, 5 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor.					
	5 Nos. - 415V, 50 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor.					
	1 No. - 415V, 100 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor.					
	4 Nos. - 415V, 40 A 50 Hz auto TP magnetic contactor with AC3 duty.					
	1 Nos. - 415V, 10 A 50 Hz auto TP magnetic contactor with AC3 duty.					
	5 Nos. - 415V, 80 A 50 Hz auto TP magnetic contactor with AC3 duty.					
	1 No. - 415V, 160 A 50 Hz auto TP magnetic contactor with AC3 duty.					
	15 Nos. - 415V, 50 A HR.C fuse with base.					
	3 Nos. - 415V, 10 A HR.C fuse with base.					
	15 Nos. - 415V, 100 A HR.C fuse with base.					
	3 Nos. - 415V, 200 A HR.C fuse with base.					
		Each	652,745.00	652,745.00	652,745.00	652,745.00
2.1.8.10	For 1000 KVA transformer (PFI capacity - 600 KVAR)					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	3 Nos. - 415V, 1200A hard drawn electrolytic copper bus bar. 1 No. - 415V, 25 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge coil for connection directly with line through fuse. 3 Nos. - 415V, 25 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 4 Nos. - 415V, 50 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 3 Nos. - 415V, 100 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 3 Nos. - 415V, 40 A 50 Hz TP magnetic contactor with AC3 duty. 4 Nos. - 415V, 80 A 50 Hz TP magnetic contactor with AC3 duty. 3 Nos. - 415V, 160 A 50 Hz TP magnetic contactor with AC3 duty. 12 Nos. - 415V, 50 A HR.C fuse with base. 12 Nos. - 415V, 100 A HR.C fuse with base. 9 Nos. - 415V, 200 A HR.C fuse with base.	Each	757,983.00	757,983.00	757,983.00	757,983.00
2.1.8.11	For 1250 KVA transformer (PFI capacity - 750 KVAR)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	3 Nos. - 415V, 1500A hard drawn electrolytic copper bus bar. 1 No. - 415V, 25 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge coil for connection directly with line through fuse. 3 Nos. - 415V, 25 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 3 Nos. - 415V, 50 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 5 Nos. - 415V, 100 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 3 Nos. - 415V, 40 A 50 Hz auto TP magnetic contactor with AC3 duty. 3 Nos. - 415V, 80 A 50 Hz auto TP magnetic contactor with AC3 duty. 5 Nos. - 415V, 160 A 50 Hz auto TP magnetic contactor with AC3 duty. 12 Nos. - 415V, 50 A HR.C fuse with base. 9 Nos. - 415V, 100 A HR.C fuse with base. 15 Nos. - 415V, 200 A HR.C fuse with base.	Each	972,055.00	972,055.00	972,055.00	972,055.00
2.1.8.12	For 1500/1600 KVA transformer (PFI capacity - 900/960 KVAR)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	3 Nos. - 415V, 1800A hard drawn electrolytic copper bus bar. 1 No. - 415V, 25 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge coil for connection directly with line through fuse. 3 Nos.-415V, 25 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 4 Nos. - 415V, 50 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 6 Nos. - 415V, 100 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 3 Nos. - 415V, 40 A 50 Hz auto TP magnetic contactor with AC3 duty. 4 Nos. - 415V, 80 A 50 Hz auto TP magnetic contactor with AC3 duty. 6 Nos. - 415V, 160 A 50 Hz auto TP magnetic contactor with AC3 duty. 12 Nos. - 415V, 50 A HR.C fuse with base. 12 Nos. - 415V, 100 A HR.C fuse with base. 18 Nos. - 415V, 200 A HR.C fuse with base.	Each	1,033,218.00	1,033,218.00	1,033,218.00	1,033,218.00
2.1.8.13	For 2000 KVA transformer (PFI capacity - 1200 KVAR)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	3 Nos. - 415V, 2000A hard drawn electrolytic copper bus bar. 1 No. - 415V, 25 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge coil for connection directly with line through fuse. 2 Nos. - 415V, 25 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 3 Nos. - 415V, 75 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 6 Nos. - 415V, 150 KVAR, 50 Hz TP power capacitor bank with built in / separate discharge resistor. 2 Nos. - 415V, 40 A 50 Hz auto TP magnetic contactor with AC3 duty. 3 Nos. - 415V, 125 A 50 Hz auto TP magnetic contactor with AC3 duty. 6 Nos. - 415V, 250 A 50 Hz auto TP magnetic contactor with AC3 duty. 9 Nos. - 415V, 50 A HR.C fuse with base. 9 Nos. - 415V, 150 A HR.C fuse with base. 18 Nos. - 415V, 300 A HR.C fuse with base.	Each	1,259,522.00	1,259,522.00	1,259,522.00	1,259,522.00

2.1.9 HT METERING UNIT

Supply of HT metering unit for 11kv sub-station with TP hard drawn electrolytic copper bus bar earth link bars manufacture 16 SWG power coat painted louver sheet steel metal enclosed free standing floor mounting dust and vermin proof completely factory assembled & suitable for indoor use including all standard IP54 accessories manufactured & type tested in accordance with NEMA / IEC / JIS along with relevant BDS standards (Country of origin: USA / Japan / EU countries or relevant electricity supply authority and as per approved/accepted by the Engineer-in-charge).

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	1 no. 3-phase 4 wire single/double tariff solid state programmable KWH meter with LCD display, MDI on kw integration period 30 minutes. 3 nos. cast resin PT Ratio: 11000 : root 3/110v : root 3 Burden: 50VA, class : 0.5 for metering 1 no. TPMCCB for PT secondary protection 3 nos. cast resin CT...../ 5A (adequate rating to be inserted) 15 VA class 0.5 M5 for metering with selector switch 3 nos. indicating light phase indicator RYB 1 set cable Test Terminal (TT) block with cover 1 no. panel heater.					
2.1.9.1	Up to 3000 KVA	Each	441,069.00	441,069.00	441,069.00	441,069.00
2.1.10	<u>LIGHTNING ARRESTER & DROPOUT FUSE</u>					
2.1.10.1	Supply of outdoor type 11 KV, 50 Hz, 100A, (10 KA), 75 KV BIL lightning arrester complete with mounting accessories etc. Made in BANGLADESH / BRAZIL or EU countries. (3 Nos. in a set).	Set	19,547.00	19,547.00	19,547.00	19,547.00
2.1.10.2	Supply of outdoor type 11KV, 50 Hz, 5KA (20 KA) dropout fuse complete with mounting accessories etc. Made in BANGLADESH / BRAZIL or EU countries. (3 Nos. in a set).	Set	25,853.00	25,853.00	25,853.00	25,853.00
2.1.11	<u>IRON CHANNEL</u> Providing & fixing U-channel iron cross-arm of size 38 mm x 76 mm x 38 mm x 6.35mm. (1.5" x 3" x 1.5" x 0.25") on single pole / H-pole with the help of necessary clamps, nuts, bolts etc. including making required no. of holes on the cross-arm for fixing of drop out fuse, lightning arrester including two coats of superior quality aluminum painting over required prime coat of anti-corrosive red-oxide painting complete as required & as per instruction of the Engineer-in-charge.	Meter	1,135.00	1,135.00	1,135.00	1,135.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.12	<u>INSTALLATION</u>					
	Installations, testing and commissioning of following 11 KV, 50 Hz. 3-phase, indoor type HT switchgear and HT Meter on prepared foundation with the help of necessary tools, plants, skilled labour & technician as per direction of the Engineer-in-charge.					
2.1.12.1	Load Break Switch.	Job	8,828.00	8,669	8,069	8,069
2.1.12.2	Withdrawable Type Vacuum Circuit Breaker	Job	15,133.00	14,861	13,831	13,831
2.1.12.3	HT meter	Job	12,611.00	12,384	11,526	11,526
2.1.12.4	RMU	Job	25,222.00	24,767	23,052	23,052
2.1.13	<u>INSTALLATION OF TRANSFORMER</u>					
	Installation, testing and commissioning of following 11 KV/ 0.415KV transformer on prepared platform on pole / CC foundation with the help of necessary tools & plants, skilled labour & technician as per direction of the Engineer-in-charge.					
2.1.13.1	Single phase transformer on pole.					
2.1.13.1.1	5-25 KVA 1 phase transformer on pole	Job	3,783.00	3,715	3,458	3,458
2.1.13.2	3 phase transformer on H-pole.					
2.1.13.2.1	50 KVA 3 phase transformer on H. pole.	Job	6,305.00	6,192	5,764	5,764
2.1.13.2.2	100-150 KVA 3 phase transformer on H. pole.	Job	8,828.00	8,669	8,069	8,069
2.1.13.2.3	200-250 KVA 3 phase transformer on H. pole.	Job	12,611.00	12,384	11,526	11,526
2.1.13.3	3 phase transformer on CC pad with proper fencing.(min 6 feet height made of MS angle/flat bar with duly painted)					
2.1.13.3.1	50 KVA 3 phase transformer on CC pad with proper fencing. .	Job	28,884.00	28,363	26,399	26,399
2.1.13.3.2	100-150 KVA 3 phase transformer on CC pad with proper fencing..	Job	30,493.00	29,944	27,871	27,871
2.1.13.3.3	200-315 KVA 3 phase transformer on CC pad with proper fencing.	Job	36,062.00	35,412	32,960	32,960
2.1.13.3.4	400-630KVA 3 phase transformer on CC pad with proper fencing.	Job	42,784.00	42,013	39,103	39,103
2.1.13.3.5	800-1000KVA 3 phase transformer on CC pad with proper fencing.	Job	52,564.00	51,617	48,043	48,043

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.13.3.6	1250-1600 KVA 3 phase transformer on CC pad with proper fencing.	Job	69,749.00	68,493	63,750	63,750
2.1.13.3.7	2000 KVA 3 phase transformer on CC pad with proper fencing.	Job	72,450.00	71,145	66,218	66,218
2.1.14	<u>INSTALLATION, TESTING, COMMISSIONING OF LT SWITCHGEAR/PFI PLANT</u> Installation, testing and commissioning of 415V, 3-phase, 50 Hz indoor type LT switchgear / PFI panel suitable for following capacity transformer on prepared CC foundation with the help of necessary tools & plants, skilled labour & technician as per direction of the Engineer-in-charge.					
2.1.14.1	For 100-150 KVA transformer	Job	5,044.00	4,954	4,610	4,610
2.1.14.2	For 200-400KVA transformer	Job	6,936.00	6,811	6,339	6,339
2.1.14.3	For 500-600 KVA transformer	Job	8,197.00	8,049	7,492	7,492
2.1.14.4	For 800-1000 KVA transformer	Job	10,089.00	9,907	9,221	9,221
2.1.14.5	For 1250-1500 KVA transformer	Job	13,872.00	13,623	12,679	12,679
2.1.14.6	For 2000 KVA transformer	Job	15,764.00	15,480	14,408	14,408
				-	-	-
2.1.15	<u>INSTALLATION OF DROP OUT FUSE/ LIGHTNING ARRESTER</u> Installation of HT drop out fuse/ lightning arrester on prepared U-channel cross-arm on single / H-pole with necessary fixing materials complete as per instruction of the Engineer-in-charge.					
2.1.15.1	Drop out fuse.	Job	1,261.00	1,238	1,153	1,153
2.1.15.2	Lightning arrester.	Job	1,261.00	1,238	1,153	1,153
2.1.16	<u>SUBSTATION MAINTENANCE/SERVICING</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Yearly checking, testing cleaning, servicing and re-commissioning of the following 11 / 0.415 KV electrical sub-station equipment (mainly transformer, circuit breakers, isolating switch, load break switch, relays, measuring devices, capacitor banks, contacts, control wiring, bushing, oils terminals etc.) by trained and skilled manpower with performing insulation tests, Earth resistance tests, injection tests and oil tests (from BRTC, BUET / CRS PDB) as per appendix-A and as per direction of the Engineer in Charge.					
2.1.16.1	FOR TRANSFORMER					
2.1.16.1.1	100 KVA to 500 KVA (Three Times in a year)	Job	18,916.00	18,916.00	18,916.00	18,916.00
2.1.16.1.2	600 KVA to 1000 KVA (Three Times in a year)	Job	25,222.00	25,222.00	25,222.00	25,222.00
2.1.16.1.3	1250 KVA and above (Three Times in a year)	Job	31,527.00	31,527.00	31,527.00	31,527.00
2.1.16.2	H.T SWITCHGEAR WITH					
2.1.16.2.1	SF6 breaker/VCB/OCB/MOCB (Three Times in a year)	Job	25,222.00	25,222.00	25,222.00	25,222.00
2.1.16.2.2	Load break switch (LBS) (Three Times in a year)	Job	15,133.00	15,133.00	15,133.00	15,133.00
2.1.16.3	L.T. SWITCH GEAR WITH					
2.1.16.3.1	Up to 800 KVA sub-station (Three Times in a year)	Job	15,133.00	15,133.00	15,133.00	15,133.00
2.1.16.3.2	1000 KVA and above sub-station. (Three Times in a year)	Job	30,266.00	30,266.00	30,266.00	30,266.00
2.1.16.4	POWER FACTOR IMPROVEMENT PLANT					
2.1.16.4.1	Up to 400 KVAR capacity (Three Times in a year)	Job	20,178.00	20,178.00	20,178.00	20,178.00
2.1.16.4.2	Above 400 KVAR capacity (Three Times in a year)	Job	24,213.00	24,213.00	24,213.00	24,213.00
2.1.17	<u>TRANSFORMER REPAIRING</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Full-rewinding of following oil immersed natural air cooled 3 phase, 50 Hz, 11 KV/0.415 KV & 0.24KV distribution X-former with existing size of HT super enamel wire, copper stripe, insulation paper / board, ampere tube, cotton tape, nitto varnish etc. as required including replacing the existing transformer oil by proper grade good quality transformer oil, painting inside / outside surface, reinstallation, testing, commissioning including carrying, loading, unloading both ways and performing all necessary testing like full load loss, no load loss, insulator resistance as per direction of the Engineer-in-charge. The transformer shall be of DYN11 vector group having percentage impedance 4-6.5%, basic insulation label 75 KV suitable for operation at 40 °C ambient temperature with maximum temperature rise to 60 °C (dismantle wires shall be taken by the contractor).					
2.1.17.1	50 KVA transformer repairing	Job	141,243.00	141,243.00	141,243.00	141,243.00
2.1.17.2	100 KVA transformer repairing	Job	172,770.00	172,770.00	172,770.00	172,770.00
2.1.17.3	150 KVA transformer repairing	Job	205,559.00	205,559.00	205,559.00	205,559.00
2.1.17.4	200 KVA transformer repairing	Job	269,875.00	269,875.00	269,875.00	269,875.00
2.1.17.5	250 KVA transformer repairing	Job	307,708.00	307,708.00	307,708.00	307,708.00
2.1.17.6	315 KVA transformer repairing	Job	365,719.00	365,719.00	365,719.00	365,719.00
2.1.17.7	400 KVA transformer repairing	Job	527,139.00	527,139.00	527,139.00	527,139.00
2.1.17.8	500 KVA transformer repairing	Job	558,667.00	558,667.00	558,667.00	558,667.00
2.1.18	<u>SPARES FOR SUBSTATION EQUIPMENT</u>					
	Supplying of the following components / equipment's suitable for use at 11 / 0.415 / 0.240 KV substation & power supply system, manufactured and tested in accordance with NEMA / IEC / VDE/ BS / JIS standards along with BDS standard accepted / approved by the Engineer-in-charge.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.18.1	11KV, 3 - phase, 50Hz HT LBS unit, 630 A, 20KA.	Each	331,669.00	331,669.00	331,669.00	331,669.00
2.1.18.2	11KV, 3 - phase, 50Hz HT VCB / SF6 circuit breaker, 630A, 20KA .	Each	697,387.00	697,387.00	697,387.00	697,387.00
2.1.18.3	11KV, 50Hz, 50VA, 11 / 0.11 ratio cast resin insulated potential transformer (PT) class 0.5.	Each	38,464.00	38,464.00	38,464.00	38,464.00
2.1.18.4	11 KV, 50Hz, 10-15VA adequate ratio, double core cast resin insulated current transformer (CT).	Each	38,464.00	38,464.00	38,464.00	38,464.00
2.1.18.5	11KV, 50Hz, 15VA, adequate ratio, single core cast resin insulated current transformer (CT).	Each	32,158.00	32,158.00	32,158.00	32,158.00
2.1.18.6	Microprocessor controlled three-phase 50Hz IDMT relay for 11KV switchgear.	Each	88,907.00	88,907.00	88,907.00	88,907.00
2.1.18.7	11KV, porcelain bushing (for transformer capacity up to 2MVA).	Each	3,531.00	3,531.00	3,531.00	3,531.00
2.1.18.8	500V, porcelain bushing (for transformer capacity up to 2 MVA).	Each	3,531.00	3,531.00	3,531.00	3,531.00
2.1.18.9	Thermostat controlled panel heater for 11KV, 50Hz switchgear.	Each	10,215.00	10,215.00	10,215.00	10,215.00
2.1.18.10	Buchholz relay for 11 / 0.415 & 0.24KV 3 - phase, 50 Hz transformer.	Each	63,181.00	63,181.00	63,181.00	63,181.00
2.1.19	<u>CAPACITOR BANK</u>					
	415V, 50Hz, 3 phase, capacitor bank of following capacity :-					
2.1.19.1	2.5 KVAR	Each	5,171.00	5,171.00	5,171.00	5,171.00
2.1.19.2	5KVAR	Each	5,171.00	5,171.00	5,171.00	5,171.00
2.1.19.3	7.5KVAR	Each	7,693.00	7,693.00	7,693.00	7,693.00
2.1.19.4	10KVAR	Each	9,855.00	9,855.00	9,855.00	9,855.00
2.1.19.5	12.5KVAR	Each	10,215.00	10,215.00	10,215.00	10,215.00
2.1.19.6	20KVAR	Each	18,185.00	18,185.00	18,185.00	18,185.00
2.1.19.7	25KVAR	Each	19,043.00	19,043.00	19,043.00	19,043.00
2.1.20	<u>POWER FACTOR CORRECTION RELAY</u>					
2.1.20.1	PFC relay 6 stages -	Each	20,241.00	20,241.00	20,241.00	20,241.00
2.1.20.2	PFC relay 9 stages -	Each	25,285.00	25,285.00	25,285.00	25,285.00
2.1.20.3	PFC relay 12 stages -	Each	34,365.00	34,365.00	34,365.00	34,365.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.21	Oil level indicator for 11/0.415 & .024 KV transformer.	Each	6,369.00	6,369.00	6,369.00	6,369.00
2.1.22	Silica Gel Breather container for transformer.	Each	3,846.00	3,846.00	3,846.00	3,846.00
2.1.23	Silica Gel for Transformer breather.	Kg	1,185.00	1,185.00	1,185.00	1,185.00
2.1.24	<u>TRANSFORMER OIL</u>	Litre	334.00	334.00	334.00	334.00
2.1.25	<u>CT (Current Transformer for REB standard)</u> Rated System Voltage : 15 KV CT Ratio : Adequate rating Rated Secondary Burden : B 0.5 Class of Accuracy : 0.3 STC : 15 kA/sec BIL : 15/34/110 KV Rated Frequency : 50 Hz Standard : ANSI C 57.13 / IEEE 3 (three) in one set	Set	227,628.00	227,628.00	227,628.00	227,628.00
2.1.26	<u>PT- (Potential Transformer for REB standard)</u> Rated System Voltage : 15 KV CT Ratio : 6350/240 V Rated Secondary Burden : Y Class of Accuracy : 0.3 BIL : 15/34/110 KV Rated Frequency : 50 Hz Standard : ANSI C 57.13 / IEEE 3 (three) in one set	Set	227,628.00	227,628.00	227,628.00	227,628.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.27	<u>CAPACITY CONTROL CIRCUIT BREAKER FEEDER UNIT</u> Supplying of 415V, 3 phase, 50Hz following capacity control circuit breaker feeder unit as per following specification with thermal over current & instantaneous electromagnetic short-circuit release manufactured and tested as per NEMA / IEC / VDE / BS / JIS along with relevant BDS standards (adjustable type above 100A rating) for sub-station L.T panel. Rated operating voltage : 220-690 V. Rated insulation voltage : 690 volt. Rated impulse withstand voltage : 6KV. Utilization category : A or B accepted / approved by the Engineer-in-charge.					
2.1.27.1	30A / 32A (16KA) TPMCCB	Each	8,626.00	8,626.00	8,626.00	8,626.00
2.1.27.2	40A(16KA) TPMCCB	Each	8,626.00	8,626.00	8,626.00	8,626.00
2.1.27.3	50A (16KA) TPMCCB	Each	8,626.00	8,626.00	8,626.00	8,626.00
2.1.27.4	60A / 63A (16KA) TPMCCB	Each	8,626.00	8,626.00	8,626.00	8,626.00
2.1.27.5	80A (16KA) TPMCCB	Each	8,714.00	8,714.00	8,714.00	8,714.00
2.1.27.6	100A (16KA) TPMCCB	Each	8,714.00	8,714.00	8,714.00	8,714.00
2.1.27.7	125A (25KA) TPMCCB.....	Each	10,215.00	10,215.00	10,215.00	10,215.00
2.1.27.8	150/160A (25KA) TPMCCB	Each	13,305.00	13,305.00	13,305.00	13,305.00
2.1.27.9	200A (36KA) TPMCCB	Each	21,691.00	21,691.00	21,691.00	21,691.00
2.1.27.10	250A (36KA) TPMCCB	Each	25,310.00	25,310.00	25,310.00	25,310.00
2.1.27.11	300A / 320A (36KA) TPMCCB	Each	48,615.00	48,615.00	48,615.00	48,615.00
2.1.27.12	400A (36KA) TPMCCB	Each	48,615.00	48,615.00	48,615.00	48,615.00
2.1.27.13	500A (36KA) TPMCCB	Each	53,029.00	53,029.00	53,029.00	53,029.00
2.1.27.14	600A / 630A (36KA) TPMCCB	Each	55,942.00	55,942.00	55,942.00	55,942.00
2.1.27.15	800A (50KA) TPMCCB	Each	76,864.00	76,864.00	76,864.00	76,864.00
2.1.27.16	1000A (50KA) TPMCCB	Each	99,816.00	99,816.00	99,816.00	99,816.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.1.27.17	1000A (65KA) ACB	Each	348,820.00	348,820.00	348,820.00	348,820.00
2.1.27.18	1200A / 1250A (65KA) ACB	Each	362,061.00	362,061.00	362,061.00	362,061.00
2.1.27.19	1600A (65KA) ACB	Each	410,614.00	410,614.00	410,614.00	410,614.00
2.1.27.20	2000A (65KA) ACB	Each	450,338.00	450,338.00	450,338.00	450,338.00
2.1.27.21	2500A (65KA) ACB	Each	547,443.00	547,443.00	547,443.00	547,443.00
2.1.27.22	3000/3200A (65KA) ACB.....	Each	679,858.00	679,858.00	679,858.00	679,858.00

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Subhead - 2.2

Generator & Related Works

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.2.1	THREE PHASE GENERATOR MANUALLY OPERATED Supply of 400V-415V, 3-phase 4-wire 50 Hz. air / water cooled, floor mounted, indoor type following continuous capacity (prime power) electric generating set suitable for tropicalized country complete with four stroke, 1500 rpm, diesel engine with all standard accessories viz. 12/24 volt DC battery & auto battery charger with ammeter, radiator assembly, oil & fuel pump, auto speed governor, air cleaner, fuel & oil tank, level & oil pressure gauge, RPM & hour meter, start & stop switch, exhaust silencer (to keep standard emission level), mounting spring and vibration isolator (to keep very minimum vibration in the room), mounting steel base frame etc. including safety & protection device viz. auto shut off with indicators for overload, over & under voltage, high temperature, low oil pressure, over speed, low fuel level etc. coupled with brush less, self excited alternator having control panel with auto voltage regulator, voltmeter & ammeter with selector switch, frequency meter compatible with standard building management system. TPMCCB of required rating for overload & instantaneous short circuit release, manual change over switch, indicator for ON-OFF-TRIP etc. including maintenance tools, 3 sets of detailed technical catalogues & maintenance manual and manufactured, assembled and tested in accordance with NEMA / IEC / VDE / JIS standards along with relevant BDS IEC standard along with relevant BDS IEC standard (subject to satisfy standard test and approved by PWD)					
2.2.1.1	(USA / UK / JAPAN / EU COUNTRIES)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	The generating set shall be assembled & tested in USA / UK / JAPAN / EU countries. The diesel engine of the generating set shall be of Perkins (UK) / Deutz (Germany) / Cummins (UK) / Mitsubishi (Japan) / Volvo (Sweden) / Kohler (France) / Yanmar (Japan) / Caterpillar (USA) brand and alternator shall be of Stamford (UK) / Mecc Alte Spa (Italy) / Leroy Somer (Italy) / Kohler (France) / Caterpillar (USA) brand. The engine, alternator shall also be manufactured and tested as per relevant standards in USA / UK / JAPAN / EU countries & accepted / approved by the Engineer-in-charge.					
2.2.1.1.1	10 KVA	Each	1,015,058.00	1,015,058.00	1,015,058.00	1,015,058.00
2.2.1.1.2	20 KVA	Each	1,218,589.00	1,218,589.00	1,218,589.00	1,218,589.00
2.2.1.1.3	30 KVA	Each	1,490,075.00	1,490,075.00	1,490,075.00	1,490,075.00
2.2.1.1.4	40 KVA	Each	1,653,678.00	1,653,678.00	1,653,678.00	1,653,678.00
2.2.1.1.5	60 KVA	Each	1,836,607.00	1,836,607.00	1,836,607.00	1,836,607.00
2.2.1.1.6	80 KVA	Each	1,955,384.00	1,955,384.00	1,955,384.00	1,955,384.00
2.2.1.1.7	100 KVA	Each	2,262,411.00	2,262,411.00	2,262,411.00	2,262,411.00
2.2.1.1.8	150 KVA	Each	2,814,367.00	2,814,367.00	2,814,367.00	2,814,367.00
2.2.1.1.9	200 KVA	Each	3,598,499.00	3,598,499.00	3,598,499.00	3,598,499.00
2.2.1.1.10	250KVA	Each	3,885,757.00	3,885,757.00	3,885,757.00	3,885,757.00
2.2.1.1.11	300 KVA	Each	4,475,443.00	4,475,443.00	4,475,443.00	4,475,443.00
2.2.1.1.12	400 KVA	Each	5,421,722.00	5,421,722.00	5,421,722.00	5,421,722.00
2.2.1.1.13	500 KVA	Each	6,688,868.00	6,688,868.00	6,688,868.00	6,688,868.00
2.2.1.2	(CHINA / INDIA / BANGLADESH / SOUTH ASIAN COUNTRIES)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	The generating set shall be manufactured / assembled & tested as per relevant standards in CHINA / INDIA / BANGLADESH / South Asian countries and accepted / approved by the Engineer-in-charge. The major components like engine shall be of Perkins / Deutz / Cummins / Mitsubishi / Volvo / Kohler / Yanmar brand and alternator shall be of Stamford / Mecc Alte Spa / Leroy Somer / Kohler brand.					
2.2.1.2.1	10 KVA	Each	852,755.00	852,755.00	852,755.00	852,755.00
2.2.1.2.2	20 KVA	Each	953,264.00	953,264.00	953,264.00	953,264.00
2.2.1.2.3	30 KVA	Each	1,143,665.00	1,143,665.00	1,143,665.00	1,143,665.00
2.2.1.2.4	40 KVA	Each	1,254,162.00	1,254,162.00	1,254,162.00	1,254,162.00
2.2.1.2.5	60 KVA	Each	1,454,551.00	1,454,551.00	1,454,551.00	1,454,551.00
2.2.1.2.6	80 KVA	Each	1,616,917.00	1,616,917.00	1,616,917.00	1,616,917.00
2.2.1.2.7	100 KVA	Each	1,887,864.00	1,887,864.00	1,887,864.00	1,887,864.00
2.2.1.2.8	150 KVA	Each	2,513,366.00	2,513,366.00	2,513,366.00	2,513,366.00
2.2.1.2.9	200 KVA	Each	3,178,494.00	3,178,494.00	3,178,494.00	3,178,494.00
2.2.1.2.10	250KVA	Each	3,502,047.00	3,502,047.00	3,502,047.00	3,502,047.00
2.2.1.2.11	300 KVA	Each	4,126,797.00	4,126,797.00	4,126,797.00	4,126,797.00
2.2.1.2.12	400 KVA	Each	4,867,318.00	4,867,318.00	4,867,318.00	4,867,318.00
2.2.1.2.13	500 KVA	Each	5,960,507.00	5,960,507.00	5,960,507.00	5,960,507.00
2.2.2	<u>THREE PHASE GENERATOR WITH ATS (WITHOUT CANOPY)</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.2.2.1	Supply of 400V-415V, 3-phase, 4-wire, 50 Hz. air / water cooled, floor mounted, indoor type following continuous capacity (prime power) electric generating set with ATS without canopy suitable for tropicalized country complete with four stroke, 1500 rpm, diesel engine with all standard accessories viz. 12/24 volt DC battery & auto battery charger with ammeter, radiator assembly, oil & fuel pump, auto speed governor, air cleaner, fuel & oil tank, level & oil pressure gauge, RPM & hour meter, start & stop switch, exhaust silencer (to keep standard emission level), mounting spring and vibration isolator (to keep very minimum vibration in the room), mounting steel base frame etc. including safety & protection device viz. auto shut off with indicators for overload, over & under voltage, high temperature, low oil pressure, over speed, low fuel level etc. coupled with brush less, self excited alternator having control panel with auto voltage regulator, voltmeter & ammeter with selector switch, frequency meter, compatible with standard building management system. TPMCCB of required rating for overload & instantaneous short circuit release, auto start and auto charge over to load within 10 sec during normal power failure and stop & auto change over to normal supply within 5 minutes after resolution of normal power supply, indicator for 3 phase indicator for ON-OFF-TRIP etc. including maintenance tools, 3 sets of detailed technical catalogues & maintenance manual. Manufactured, assembled and tested in accordance with NEMA / IEC / VDE / JIS standards along with relevant BDS IEC standard (subject to satisfy standard test and approved by PWD)					
	(USA / UK / JAPAN / EU COUNTRIES)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	The generating set shall be assembled & tested in USA / UK / JAPAN / EU countries. The major components like engine shall be of Perkins / Deutz / Cummins / Mitsubishi / Volvo / Kohler / Yanmar brand and alternator shall be of Stamford / Mecc Alte Spa / Leroy Somer / Kohler brand. The engine, alternator, ATS shall also be manufactured and tested as per relevant standards in USA / UK / JAPAN / EU countries & accepted / approved by the Engineer-in-charge.					
2.2.2.1.1	10 KVA	Each	1,065,622.00	1,065,622.00	1,065,622.00	1,065,622.00
2.2.2.1.2	20 KVA	Each	1,330,828.00	1,330,828.00	1,330,828.00	1,330,828.00
2.2.2.1.3	30 KVA	Each	1,614,798.00	1,614,798.00	1,614,798.00	1,614,798.00
2.2.2.1.4	40 KVA	Each	1,736,079.00	1,736,079.00	1,736,079.00	1,736,079.00
2.2.2.1.5	60 KVA	Each	1,933,346.00	1,933,346.00	1,933,346.00	1,933,346.00
2.2.2.1.6	80 KVA	Each	2,175,616.00	2,175,616.00	2,175,616.00	2,175,616.00
2.2.2.1.7	100 KVA	Each	2,374,775.00	2,374,775.00	2,374,775.00	2,374,775.00
2.2.2.1.8	150 KVA	Each	3,014,025.00	3,014,025.00	3,014,025.00	3,014,025.00
2.2.2.1.9	200 KVA	Each	3,842,347.00	3,842,347.00	3,842,347.00	3,842,347.00
2.2.2.1.10	250KVA	Each	4,160,568.00	4,160,568.00	4,160,568.00	4,160,568.00
2.2.2.1.11	300 KVA	Each	4,851,144.00	4,851,144.00	4,851,144.00	4,851,144.00
2.2.2.1.12	400 KVA	Each	5,859,722.00	5,859,722.00	5,859,722.00	5,859,722.00
2.2.2.1.13	500 KVA	Each	7,190,979.00	7,190,979.00	7,190,979.00	7,190,979.00
2.2.2.2	(CHINA / INDIA / BANGLADESH / SOUTH ASIAN COUNTRIES)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	The generating set shall be manufactured / assembled & tested as per relevant standards in CHINA / INDIA / BANGLADESH / South Asian countries and accepted / approved by the Engineer-in-charge. The major components like engine shall be of Perkins / Deutz / Cummins / Mitsubishi / Volvo / Kohler / Yanmar brand and alternator shall be of Stamford / Mecc Alte Spa / Leroy Somer / Kohler brand.					
2.2.2.2.1	10 KVA	Each	908,937.00	908,937.00	908,937.00	908,937.00
2.2.2.2.2	20 KVA	Each	1,009,446.00	1,009,446.00	1,009,446.00	1,009,446.00
2.2.2.2.3	30 KVA	Each	1,203,592.00	1,203,592.00	1,203,592.00	1,203,592.00
2.2.2.2.4	40 KVA	Each	1,321,581.00	1,321,581.00	1,321,581.00	1,321,581.00
2.2.2.2.5	60 KVA	Each	1,535,703.00	1,535,703.00	1,535,703.00	1,535,703.00
2.2.2.2.6	80 KVA	Each	1,724,287.00	1,724,287.00	1,724,287.00	1,724,287.00
2.2.2.2.7	100 KVA	Each	2,012,713.00	2,012,713.00	2,012,713.00	2,012,713.00
2.2.2.2.8	150 KVA	Each	2,695,891.00	2,695,891.00	2,695,891.00	2,695,891.00
2.2.2.2.9	200 KVA	Each	3,403,248.00	3,403,248.00	3,403,248.00	3,403,248.00
2.2.2.2.10	250KVA	Each	3,764,129.00	3,764,129.00	3,764,129.00	3,764,129.00
2.2.2.2.11	300 KVA	Each	4,501,717.00	4,501,717.00	4,501,717.00	4,501,717.00
2.2.2.2.12	400 KVA	Each	5,368,337.00	5,368,337.00	5,368,337.00	5,368,337.00
2.2.2.2.13	500 KVA	Each	6,522,239.00	6,522,239.00	6,522,239.00	6,522,239.00
2.2.3	THREE PHASE GENERATOR WITH ATS AND SOUND ATTENUATED <u>ACOUSTICALLY TREATED CANOPY</u> (Maximum sound level : 75 dBA at 7m distance in the generator room).					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.2.3.1	Supply of 400V-415V, 3-phase, 4-wire, 50 Hz. air / water cooled, floor mounted, indoor type following continuous capacity (prime power) electric generating set with ATS and sound attenuated acoustically treated canopy (Maximum sound level : 75 dBA at 7m distance in the generator room) suitable for tropicalized country complete with four stroke, 1500 rpm, diesel engine with all standard accessories viz. 12/24 volt DC battery & auto battery charger with ammeter, radiator assembly, oil & fuel pump, auto speed governor, air cleaner, fuel & oil tank, level & oil pressure gauge, RPM & hour meter, start & stop switch, exhaust silencer (to keep standard emission level), mounting spring and vibration isolator (to keep very minimum vibration in the room), mounting steel base frame etc. including safety & protection device viz. auto shut off with indicators for overload, over & under voltage, high temperature, low oil pressure, over speed, low fuel level etc. coupled with brush less, self excited alternator having control panel with auto voltage regulator, voltmeter & ammeter with selector switch, frequency meter, compatible with standard building management system. TPMCCB of required rating for overload & instantaneous short circuit release, auto start and auto charge over to load within 10 sec during normal power failure and stop & auto change over to normal supply within 5 minutes after resolution of normal power supply, indicator for 3 phase indicator for ON-OFF-TRIP etc. including maintenance tools, 3 sets of detailed technical catalogues & maintenance manual. Manufactured, assembled and tested in accordance with NEMA / IEC / VDE / JIS standards along with relevant BDS IEC standard (subject to satisfy standard test and approved by PWD)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	The generating set shall be assembled & tested in USA / UK / JAPAN / EU countries. The major components like engine shall be of Perkins / Deutz / Cummins / Mitsubishi / Volvo / Kohler / Yanmar brand and alternator shall be of Stamford / Mecc Alte Spa / Leroy Somer / Kohler brand. The engine, alternator, ATS, canopy shall also be manufactured and tested as per relevant standards in USA / UK / JAPAN / EU countries & accepted / approved by the Engineer-in-charge.					
2.2.3.1.1	10 KVA	Each	1,116,186.00	1,116,186.00	1,116,186.00	1,116,186.00
2.2.3.1.2	20 KVA	Each	1,405,217.00	1,405,217.00	1,405,217.00	1,405,217.00
2.2.3.1.3	30 KVA	Each	1,694,248.00	1,694,248.00	1,694,248.00	1,694,248.00
2.2.3.1.4	40 KVA	Each	1,818,479.00	1,818,479.00	1,818,479.00	1,818,479.00
2.2.3.1.5	60 KVA	Each	2,025,110.00	2,025,110.00	2,025,110.00	2,025,110.00
2.2.3.1.6	80 KVA	Each	2,278,616.00	2,278,616.00	2,278,616.00	2,278,616.00
2.2.3.1.7	100 KVA	Each	2,487,138.00	2,487,138.00	2,487,138.00	2,487,138.00
2.2.3.1.8	150 KVA	Each	3,437,263.00	3,437,263.00	3,437,263.00	3,437,263.00
2.2.3.1.9	200 KVA	Each	4,222,587.00	4,222,587.00	4,222,587.00	4,222,587.00
2.2.3.1.10	250KVA	Each	4,964,188.00	4,964,188.00	4,964,188.00	4,964,188.00
2.2.3.1.11	300 KVA	Each	5,955,512.00	5,955,512.00	5,955,512.00	5,955,512.00
2.2.3.1.12	400 KVA	Each	7,363,288.00	7,363,288.00	7,363,288.00	7,363,288.00
2.2.3.1.13	500 KVA	Each	8,267,762.00	8,267,762.00	8,267,762.00	8,267,762.00
2.2.3.2	(CHINA / INDIA / BANGLADESH / SOUTH ASIAN COUNTRIES) The generating set shall be manufactured / assembled & tested as per relevant standards in CHINA / INDIA / BANGLADESH / SOUTH ASIAN Countries and accepted / approved by the Engineer-in-charge. The major components like engine shall be of Perkins / Deutz / Cummins / Mitsubishi / Volvo / Kohler / Yanmar brand and alternator shall be of Stamford / Mecc Alte Spa / Leroy Somer / Kohler brand.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.2.3.2.1	10 KVA	Each	1,004,945.00	1,004,945.00	1,004,945.00	1,004,945.00
2.2.3.2.2	20 KVA	Each	1,153,022.00	1,153,022.00	1,153,022.00	1,153,022.00
2.2.3.2.3	30 KVA	Each	1,347,168.00	1,347,168.00	1,347,168.00	1,347,168.00
2.2.3.2.4	40 KVA	Each	1,461,411.00	1,461,411.00	1,461,411.00	1,461,411.00
2.2.3.2.5	60 KVA	Each	1,719,230.00	1,719,230.00	1,719,230.00	1,719,230.00
2.2.3.2.6	80 KVA	Each	1,950,264.00	1,950,264.00	1,950,264.00	1,950,264.00
2.2.3.2.7	100 KVA	Each	2,237,441.00	2,237,441.00	2,237,441.00	2,237,441.00
2.2.3.2.8	150 KVA	Each	3,095,302.00	3,095,302.00	3,095,302.00	3,095,302.00
2.2.3.2.9	200 KVA	Each	3,802,346.00	3,802,346.00	3,802,346.00	3,802,346.00
2.2.3.2.10	250KVA	Each	4,469,787.00	4,469,787.00	4,469,787.00	4,469,787.00
2.2.3.2.11	300 KVA	Each	5,362,231.00	5,362,231.00	5,362,231.00	5,362,231.00
2.2.3.2.12	400 KVA	Each	6,675,859.00	6,675,859.00	6,675,859.00	6,675,859.00
2.2.3.2.13	500 KVA	Each	7,443,760.00	7,443,760.00	7,443,760.00	7,443,760.00

2.2.4 **MOBILE TYPE GENERATOR**

The generating set shall be assembled & tested in USA / UK / JAPAN / EU countries. The major components like engine shall be of Perkins / Deutz / Cummins / Mitsubishi / Volvo / Kohler / Yanmar brand and alternator shall be of Stamford / Mecc Alte Spa / Leroy Somer / Kohler brand. The engine, alternator, ATS, canopy shall also be manufactured and tested as per relevant standards in USA / UK / JAPAN / EU countries & accepted / approved by the Engineer-in-charge.

With sound attenuated acoustically treated canopy, standard chassis including necessary wheels, brakes etc. as required as outdoor-type mobile unit. (Maximum sound level : 75 dBA at 7m distance (outdoor)).

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.2.4.1	20 KVA	Each	1,751,035.00	1,751,035.00	1,751,035.00	1,751,035.00
2.2.4.2	30 KVA	Each	1,874,723.00	1,874,723.00	1,874,723.00	1,874,723.00
2.2.4.3	60 KVA	Each	2,144,584.00	2,144,584.00	2,144,584.00	2,144,584.00
2.2.4.4	80 KVA	Each	2,533,762.00	2,533,762.00	2,533,762.00	2,533,762.00
2.2.4.5	100 KVA	Each	2,709,412.00	2,709,412.00	2,709,412.00	2,709,412.00
2.2.4.6	150 KVA	Each	3,377,222.00	3,377,222.00	3,377,222.00	3,377,222.00
2.2.4.7	200 KVA	Each	4,002,096.00	4,002,096.00	4,002,096.00	4,002,096.00
2.2.5	<u>INSTALLATION</u>					
	Installation, testing & commissioning of following electric generator on prepared CC pad with the help of necessary T & P, skilled labour, technician, Engineer-in-charge including 2 hrs. / 5 day trial run operation by skilled operator with supply of necessary fuel & lubricant as per manufacturers instruction manual and in accordance with relevant IEC / NEMA / VDE / JIS standards so that vibration transfer rate to foundation shall be almost zero.					
2.2.5.1	10KVA –20 KVA recoil start/auto battery start electric generating set.	Each	16,924.00	16618	15468	15468
2.2.5.2	30KVA – 80 KVA manual/auto/auto with soundproof acoustically treated canopy generating set.	Each	32,183.00	31604	29415	29415
2.2.5.3	100KVA – 150 KVA manual/auto/auto with soundproof acoustically treated canopy/mobile generating set with soundproof acoustically treated canopy.	Each	43,836.00	43045	40066	40066

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.2.5.4	200 KVA – 300 KVA manual/auto/auto with sound-proof acoustically treated canopy generating set.	Each	47,581.00	46724	43488	43488
2.2.5.5	400 KVA – 500 KVA manual/auto/auto with soundproof acoustically treated canopy generating set.	Each	100,711.00	98897	92049	92049
2.2.6	<u>OPERATION & MAINTANANCE</u> Monthly Operation & maintenance of Generator set by skilled Mechanic/Electrician, Generator Operator & Helper round the clock including servicing, greasing, Changing of oil & air filter, operating changeover switch by manually / auto changeover switch, checking of contact points, minor repairing etc. as required and as per direction of the Engineer-in-charge.					
2.2.6.1	Up to 630 KVA	per month	23,469.00	21,621.00	21,621.00	21,621.00
2.2.7	<u>GENERATOR BATTERY</u> Supply of the following generator batteries accepted /approved by the Engineer-in-charge .					
2.2.7.1	Volt : 12 V Amp : 100 AH Plate : 17	Each	15,385.00	15,385.00	15,385.00	15,385.00
2.2.7.2	Volt : 12 V Amp : 105 AH Plate : 19	Each	16,016.00	16,016.00	16,016.00	16,016.00
2.2.7.3	Volt : 12 V Amp : 120 AH Plate : 21	Each	19,169.00	19,169.00	19,169.00	19,169.00
2.2.7.4	Volt : 12 V Amp : 150 AH Plate : 25	Each	22,952.00	22,952.00	22,952.00	22,952.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.2.7.5	Volt : 12 V Amp : 200 AH Plate : 29	Each	25,474.00	25,474.00	25,474.00	25,474.00
2.2.8	<u>AUTOMATIC BATTERY CHARGER</u> Automatic battery charger input voltage 220V ± 10%, single phase, 50Hz suitable for charging at constant voltage/current having necessary protective device against reverse battery terminal, short circuit complete with indicators, volt & amp meters, charging selector switch, ventilation fan etc. as required of following capacity accepted /approved by the Engineer-in-charge.					
2.2.8.1	12 V DC, 20 amp	Each	63,307.00	63,307.00	63,307.00	63,307.00
2.2.8.2	12 V DC, 30 amp	Each	75,918.00	75,918.00	75,918.00	75,918.00
2.2.8.3	24 V DC 15 amp.	Each	63,307.00	63,307.00	63,307.00	63,307.00
2.2.8.4	24 V DC 20 amp.	Each	75,918.00	75,918.00	75,918.00	75,918.00
2.2.8.5	48 V DC 15 amp.	Each	126,362.00	126,362.00	126,362.00	126,362.00
2.2.8.6	48 V DC 20 amp.	Each	157,890.00	157,890.00	157,890.00	157,890.00
2.2.9	<u>GENERATOR SPARE PARTS</u> Supply and installation of following generator servicing spare parts / items as required of following capacity accepted /approved by the Engineer-in-charge)					
2.2.9.1	Rating: 10 KVA - 100 KVA					
2.2.9.1.1	Fuel Filter	Nos	1,776.00	1,776.00	1,776.00	1,776.00
2.2.9.1.2	Fuel Filter Separator	Nos	1,845.00	1,845.00	1,845.00	1,845.00
2.2.9.1.3	Oil Filter	Nos	1,985.00	1,985.00	1,985.00	1,985.00
2.2.9.1.4	Air Filter	Nos	4,660.00	4,660.00	4,660.00	4,660.00
2.2.9.1.5	Lube Oil	Ltr	807.00	807.00	807.00	807.00
2.2.9.1.6	Coolant	Ltr	883.00	883.00	883.00	883.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
2.2.9.2	Rating: 150 KVA - 200 KVA					
2.2.9.2.1	Primary Fuel Filter	Nos	1,848.00	1,848.00	1,848.00	1,848.00
2.2.9.2.2	Secondary Fuel Filter	Nos	2,110.00	2,110.00	2,110.00	2,110.00
2.2.9.2.3	Oil Filter	Nos	1,985.00	1,985.00	1,985.00	1,985.00
2.2.9.2.4	Air Filter	Nos	10,804.00	10,804.00	10,804.00	10,804.00
2.2.9.2.5	Lube Oil	Ltr	807.00	807.00	807.00	807.00
2.2.9.2.6	Coolant	Ltr	883.00	883.00	883.00	883.00
2.2.9.3	Rating: 250 KVA - 500 KVA					
2.2.9.3.1	Primary Fuel Filter	Nos	5,646.00	5,646.00	5,646.00	5,646.00
2.2.9.3.2	Secondary Fuel Filter	Nos	4,534.00	4,534.00	4,534.00	4,534.00
2.2.9.3.3	Oil Filter	Nos	5,568.00	5,568.00	5,568.00	5,568.00
2.2.9.3.4	Air Filter	Nos	15,385.00	15,385.00	15,385.00	15,385.00
2.2.9.3.5	Lube Oil	Ltr	807.00	807.00	807.00	807.00
2.2.9.3.6	Coolant	Ltr	883.00	883.00	883.00	883.00

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Subhead-2.2
Generator and Related Works
ANNEXURE : 2.2

It shall be part & parcel of general and particular specification of STD .

DETAILED SPECIFICATION:

Diesel engine driven generating set having a continuous rated output at 0.8 Power factor at 415/230 Volts, 3-phase, 4-wire, 50Hz at 1500 RPM under conditions of normal temperatures and pressures with 10% overload for one hour at conditions specified under B.S. 5514, DIN6271, ISO 3046 / 1.

ENGINE:

Diesel engine driven generating set having a continuous rated output at 0.8 Power factor at 415/230 Volts, 3-phase, 4-wire, 50Hz at 1500 RPM under conditions of normal temperatures and pressures with 10% overload for one hour at conditions specified under B.S. 5514, DIN6271, ISO 3046/1.

The engine shall be complete with close control governing to BS 5514, 1979 Class A1 Fuel Injection equipment with

- a) Fuel oil filters
- b) Lubricating oil filters
- c) Air cleaners/filters
- d) Fuel solenoid energized to run,
- e) Lubricating oil pressure pump,
- f) Water circulating pump,
- g) Battery charging generator,
- h) Precision mechanical governor,
- i) Starter motor,
- j) Fuel solenoid
- k) Thermostatically controlled by pass system

ENGINE STARTING :

The engine shall be fitted with manual automatic electric starting by means of a starter motor arranged to engage with the fly wheel.

ENGINE COOLING :

The diesel engine shall be cooled via a tropical air blast heavy duty radiator with engine driven pusher type fan, complete with water circulating pump , radiator guard, thermostat and by pass system .

BATTERIES :

The unit shall be supplied with a set of suitably rated heavy duty 12/24 volt industrial type lead acid batteries (dry charged). A mains operated battery charger should be mounted in control cubicle. A set of starter cables and connections would be supplied loose.

LUBRICATING SYSTEM :

Wet sump force feed lubrication system by gear driven oil pump incorporating replaceable oil filters.

EXHAUST SYSTEM :



The engine shall be supplied with :-

Acoustic type silencers, flexible bellows sections and rigid exhaust pipe of suitable length, suitable for use with Vee form engine, supplied loose for site erection. The complete exhaust system shall be designed to prevent any de-rate of the engine due to excessive back pressure. All exhaust components are to be finished with heat resistant paint.

ALTERNATOR :

Brushless Salient pole rotating field, self-exciting, self-regulating, single bearing construction with integral automatic voltage regulator providing voltage control to within +/- 2% of nominal range, no load to full load and at all power factors between unity and 0.8 lagging and with a maximum 5% prime mover speed variation.

Class H insulating on both rotor and stator windings and with enclosures to IP21 of BS 4999 Part 20, IEC & DIN standards. The alternator meets the requirement of BS 5000 and radio suppression to BS 800 & VDE class G&N.

ANTI-VIBRATION MOUNTINGS :

A set of anti-vibration mounts and spring isolator would be supplied loose for positioning beneath bed frame when the side is delivered to site. These have their own in - built leveling device and friction pad, therefore fixing to the floor is not necessary.

FUEL SYSTEM :

The unit shall be supplied with a base mounted fuel tank in corporate in the base frame of the unit providing sufficient fuel for 8 hours continuous full load operation, the base shall be pressure tested prior to assembly and will incorporate dial type content/gauge, filler cap, vent pipe, drain cock and all necessary fuel connections. All pipe terminations shall be completed during works assembly. The system shall include arrangement for low and high level alarm system of fuel. An additional daily fuel tank (self standing)1500 liter capacity with automatic supply type including level switch & pump .

FUEL TRANSFER :

A set of rotary type hand pump would be supplied with 3 meters of flexible pipe, suitable for manual fuel transfer to the daily service fuel tank.

COUPLING :

The alternator casing would be flange mounted to the engine flywheel housing and the rotor shaft, coupled to the engine flywheel through a flexible element to minimize torsional vibration throughout the operating range.

BASE FRAME :

The engine and alternator would be mounted on a fabricated steel type base frame of welded construction adequately designed to resist bending and torsional forces. The base frame shall accurately align and support the assembly and shall provide Sub-Station & Diesel Generator Set setting points and location points for securing to the foundation.

ENGINE INSTRUMENTATION :

Incorporated in the control panel or mounted on a separate engine mounted panel, our option, shall be the following engine instrumentation:-

1-Oil Pressure gauge.

1-Water Temperature gauge.

1-Hours run recorder.

BONNET & SOUND PROOF CANOPY :

Should be fabricated by heavy duty steel structure covering with steel sheet. The inner side of the steel enclosure should be lined with sound absorbing materials which should be covered by perforated steel sheet. The sound reducing level should be 82 dBA @ 1 meter from the canopy.

GENERATING SET PROTECTION :

The unit shall be arranged to automatically shutdown and indicate the same in the event of:

- Fail to start
- Low oil pressure
- High engine temperature
- Engine over speed
- Overload
- Over/under voltage protection

FINISH:

The generating set would be finished in Hammer blue/Yellow and the control panel in grey/Yellow.

HAND BOOKS :

The equipment would be supplied with:

- i. Operation & maintenance manual.
- ii. Engine & alternator parts catalogue.

TOOLS :

One set of standard routine maintenance tools would be supplied in a tool box.

AUTO CHANGE OVER SWITCH :

At the event of mains failure, an energy stop switch should be attached with the Alternator body, the generator shall start or if supply voltage goes below specific level or single phasing automatically and change over to the load. With restoration of main supply the generator shall shut down automatically as well as the load shall be transferred to the normal supply. The bidder must mention the change over time in seconds.

The supply and installation of generators with automatic change over switch shall be on "turnkey basis" and shall include the cost of:

- a) Taking necessary permission from the relevant of authority.
- b) All pipe works.
- c) all inter connecting power and control cable works.
- d) Daily and reserve fuel tank including the transfer pump.

CHANGEOVER SWITCH OF A GENERATOR

A standby generator, if needed, is to be connected at the supply input point after the energy meter and after the main incoming switch or the main incoming circuit breaker, but through a changeover switch of appropriate rating. The rating of such a switch shall be at least 1.25 times the rating of the main incoming circuit breaker. The changeover switch shall be of such a type so that when moved to the mains position, there is no chance that the generator will be connected and vice versa.

TABLE 2.2.1 :- GENERATOR ROOM AREA

Area Required for Generator Room for Different capacities

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Capacity (KW)	Area (m ²)
1 x 25	20
1 x 48	24
1 x 100	30
1 x 150	36
1 x 300	48
1 x 500	56

Note :

1)Generator shall not be installed in basement floor of any building .

TABLE 2.2.2 :- GENERATOR PHYSICAL DIMENSION

Dimension Required for Generator of Different capacities

Capacity (KW)	Approximate Dimension Length (mm)* Width (mm)* Height (mm)
1 x 10	1750*775*1230
1 x 20	2100*938*1285
1 x 30	2100*938*1285
1 x 40	2100*938*1285
1 x 60	2572*1126*1571
1 x 80	2572*1126*1571
1 x 100	2572*1126*1571
1 x 150	3508*1200*1830
1 x 200	3508*1200*1830
1 x 250	4004*1380*2145
1 x 300	4475*1410*2430
1 x 400	5031*1560*2435
1 x 500	5031*1560*2435

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Subhead -3

HT & LT Overhead Distribution Line

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)

3.1 MS POLE

Providing following seamless tubular pole fabricated with 4.76 mm (3/16") thick MS sheet having different sections with 152.40 mm long MS reducing collar joint complete with MS base plate, top cover & duly painted with two coats of superior quality paint over two prime coats of red oxide etc. as required.

	Total length	Inner Dia	Length	Thickness	Inner Dia	Length	Base plate					
3.1.1	40'	6"	20'	4mm	4"	20'	2' x 2' x 6mm	Each	33,693.00	33693	33693	33693
3.1.2	35'	6"	20'	4mm	4"	15'	2' x 2' x 6mm	Each	31,512.00	31511	31511	31511
3.1.3	30'	6"	20'	4mm	4"	10'	2' x 2' x 6mm	Each	29,450.00	29450	29450	29450
3.1.4	25'	4"	20'	4mm	3"	5'	1.5'x1.5'x6mm	Each	13,434.00	13433	13433	13433
3.1.5	20'	3"	15'	3mm	2.5"	5'	1'x1' x 6mm	Each	9,712.00	9712	9712	9712

3.2 GI POLE

Providing following seamless GI pole fabricated with GI pipe complete with GI sockets, MS. base plate, top cover, necessary welding as required:-

	Total length	Dia	Length	Thickness	Dia	Length	Base plate					
3.2.1	40'	6"	20'	4mm	4"	20'	2' x 2' x 6mm	Each	35,812.00	35811	35811	35811
3.2.2	35'	6"	20'	4mm	4"	15'	2' x 2' x 6mm	Each	32,476.00	32476	32476	32476
3.2.3	30'	6"	20'	4mm	4"	10'	2' x 2' x 6mm	Each	30,024.00	30023	30023	30023
3.2.4	25'	4"	20'	4mm	3"	5'	1.5' x 1.5' x 6mm	Each	17,009.00	17009	17009	17009
3.2.5	20'	3"	15'	3mm	2.5"	5'	1' x 1' x 6mm	Each	12,130.00	12130	12130	12130

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Item No.	Description of Items							Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
3.2.6	10'	3"	10'	3mm			9"x9"x 6mm	Each	7,963.00	7963	7963	7963

3.3 HEXAGONAL / OCTAGONAL SHAPE POLE (GI)

Providing following seamless Hexagonal / octagonal shape (GI) pole fabricated with GI pipe complete with GI sockets, MS base plate, top cover, necessary welding as required :-

	Total length	Dia	Length	Thickness	Dia	Length	Base plate					
3.3.1	40'	6"	30'	4mm	4"	10'	2' x 2' x 0.25"	Each	44,391.00	44390	44390	44390
3.3.2	35'	6"	25'	4mm	4"	10'	2' x 2' x 0.25"	Each	39,535.00	39535	39535	39535
3.3.3	30'	6"	20'	4mm	4"	10'	2' x 2' x 0.25"	Each	34,680.00	34680	34680	34680
3.3.4	25'	4"	20'	4mm	3"	5'	1.5' x 1.5' x 0.25"	Each	20,808.00	20807	20807	20807
3.3.5	20'	3"	15'	3mm	2.5"	5'	1' x 1' x 0.25"	Each	11,098.00	11097	11097	11097
3.3.6	10'	3"	10'	3mm			9"x9"x0.19"	Each	6,242.00	6242	6242	6242

3.4 RECTANGULAR SHAPE POLE (GI)

Providing following seamless rectangular shape (GI) pole fabricated with GI pipe complete with GI sockets, MS base plate, top cover, necessary welding as required:-

Total length	Inner Size	Length	Thick	Inner Size	Length	Base plate

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Item No.	Description of Items							Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Length	Size		Thick	Size							
3.4.1	40'	7"x4"	30'	4mm	4"x3"	10'	2' x 2' x 0.25"	Each	44,391.00	44390	44390	44390
3.4.2	35'	7"x4"	25'	4mm	4"x3"	10'	2' x 2' x 0.25"	Each	39,535.00	39535	39535	39535
3.4.3	30'	7"x4"	20'	4mm	4"x3"	10'	2' x 2' x 0.25"	Each	34,680.00	34680	34680	34680
3.4.4	25'	4"x3"	20'	4mm	3"x2.5"	5'	1.5' x 1.5' x 0.25"	Each	20,808.00	20807	20807	20807
3.4.5	20'	3"x2.5"	15'	3mm	2.5"x2"	5'	1' x 1' x 0.25"	Each	11,098.00	11097	11097	11097
3.4.6	10'	3"x2.5"	10'	3mm			9"x9"x0.19"	Each	6,242.00	6242	6242	6242
3.5	<u>RCC TUBULAR POLE</u>											
	Providing RCC type pre-stressed concrete pole with bottom plate fabricated and high tensile steel wire (5mm dia). (suitable for using in saline and coastal areas)											
	Total length	Dia	Length	Length	Dia	Length	Base plate					
3.5.1	40'	12"	30'	10'	8"	10'	2' x 2' x 0.25"	Each	31,527.00	31527	31527	31527
3.5.2	35'	10"	25'	10'	6"	10'	2' x 2' x 0.25"	Each	25,222.00	25222	25222	25222
3.5.3	30'	8"	20'	10'	4"	10'	2' x 2' x 0.25"	Each	20,178.00	20177	20177	20177
3.6	<u>SPUN PC POLE</u>											
	Providing spun type pre-stressed concrete pole with bottom plate fabricated and high tensile steel wire (5mm dia) manufactured by government owned company or Bangladesh power development board or private manufacturers as follows.(suitable for using in saline and coastal areas)											
3.6.1	Total 12000 mm (39.37') long pole having Top dia 230mm (9"), Bottom dia 390 mm (15") , wall thickness 55mm (2.16"), weight 1250kg, breaking strength 512kg/sqmm.							Each	25,222.00	25222	25222	25222

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
3.6.2	Total 11000 mm (36.00') long pole having Top dia 230mm (9"), Bottom dia 375 mm (14.76") , wall thickness 55mm (2.16"), weight 1100kg, breaking strength 512kg/sqmm.	Each	22,700.00	22699	22699	22699
3.6.3	Total 9000 mm (29.52') long pole having Top dia 150mm (5.90"), Bottom dia 270 mm (10.63") , wall thickness 50mm (1.97"), weight 522kg, breaking strength 232kg/sqmm.	Each	12,611.00	12610	12610	12610
3.7	<u>POLE ERECTION</u>					
3.7.1	Erection of following tubular pole up to 1828.80 mm (6') depth by placing the pole base on one layer of 1st. class brick flat soling over 76.2 mm (3") sand bedding and making 1:2:4 (1.5' x 1.5' x 7') CC work around the pole including excavation & refilling and ramming the loose soil etc. as required.					
3.7.1.1	12192 mm (40') long MS / GI / RCC / spun PC pole with 457 mm x 457 mm (1.5'x1.5') CC work up to 6' below GL and 1' above GL including curing and neat cement finishing over concrete surface.	Each	3,520.00	3456	3217	3217
3.7.1.2	10668 mm (35') long MS/GI pole with 457.20 mm x 457.20 mm (1.5'x1.5') CC work up to 6' below GL and 1' above GL including curing and neat cement finishing over concrete surface.	Each	3,344.00	3284	3055	3055
3.7.2	Erection of following tubular pole up to 1524 mm (5') depth by placing the pole base on one layer of 1st. class brick flat soling over 76.2 mm (3") sand bedding and making 1:2:4 (1.5' x 1.5' x 6') CC work around the pole up to 5' below GL and 1' above GL, 12.5 mm (1/2") thick cement plaster with neat cement finishing over concrete surface above GL including proper curing, excavation & refilling and ramming the loose soil etc. as required.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
3.7.2.1	9144 mm (30') long MS / GI / RCC / spun PC pole	Each	3,168.00	3111	2895	2895
3.7.2.2	7620 mm (25') long MS / GI / RCC / spun PC pole	Each	2,992.00	2938	2734	2734
3.7.2.3	6096 mm (20') long MS / GI / RCC / spun PC pole	Each	2,816.00	2766	2573	2573
3.7.3	Erection of 3048 mm (10') long GI pole up to 609.6 mm (2') depth and making 228.60 mm x 228.60 mm (0'-9" x 0'-9") 1:2:4 CC work around the pole from 304.80 mm (2') below GL up to 304.8 mm (1 ft.) above GL 76.20 mm (3") thick brick soling over 76.20 mm (3") layer of sand bedding, 12.5 mm (1/2") thick cement plaster and neat cement finishing over concrete surface including excavation, refilling and ramming the loose soil surrounding CC work, proper curing etc. complete as required.					
3.7.3.1	3048 mm (10') long GI pole	Each	2,640.00	2593	2412	2412
3.8	<u>WIRE RACK / CROSS ARM</u>					
3.8.1	Providing and fixing 914.4 mm (3'-0") long 3 spool vertical wire rack fabricated with 38.10 mm x 38.1mm x 6.35 mm (1.5" x 1.5" x 0.25") MS angle complete with 3 no's of 'U' clamp and 2 no's of 'D' clamp made of 25.4 mm x 6.35 mm (1" x 1/4") flat MS. bar for fixing insulators and clamping the rack respectively including necessary welding, GI nuts, bolts, washer etc. with two coats of aluminum painting over prime coat of red oxide painting.	Each	757.00	756	756	756
3.8.2	Providing and fixing 1219 mm (4'-0") long 4 spool vertical wire rack fabricated with 38.10 mm x 76.2mm x 38.1 mm x 6.35 mm (1.5" x 3" x 1.5" x 0.25") MS channel complete with 4 no's of 'U' clamp and 2 no's of 'D' clamp made of 25.4 mm x 6.35 mm (1" x 1/4") flat MS bar for fixing insulators and clamping the rack respectively including necessary welding, GI nuts, bolts, washer etc. with two coats of aluminum painting over prime coat of red oxide painting.	Each	1,009.00	1009	1009	1009

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
3.8.3	Providing and fixing 1524 mm (5'-0") long 5 spool vertical wire rack fabricated with 38.1 mm x 76.2 mm x 38.1 mm x 6.35 mm (1.5" x 3" x 1.5" x 0.25") MS. Channel complete with 5 nos of 'U' clamp and 2 nos of 'D' clamp made of 25.4 mm x 6.35 mm (1" x ¼") flat MS. bar for fixing insulators and clamping the rack respectively including necessary welding, GI. nuts, bolts, washer etc. with two coats of aluminum painting over prime coat of red oxide painting	Each	1,261.00	1261	1261	1261
3.8.4	Providing and fixing 1524 mm (5'-0") long clamp bracket fabricated with 76 mm x 6.35 mm thick (3"x1/4" thick) MS flat bar complete with 2 Nos of "D" clamp made of 38.1 mm x 6.35mm thick x 762mm long (1.5" x 1/4" thick x 2'-6" long) for fixing clamp brackets, units & bolts etc. complete (For HT line) in/c. hot-deep galvanizing of the complete cross arm as per direction of E/C.	Each	1,639.00	1639	1639	1639
3.8.5	Providing and fixing 1524 mm (5'-0") long cross arm fabricated with 76 mm x 76 mm x 6.35 mm thick (3"x3"x1/4"thick) MS channel with necessary clamp brackets, nut bolts etc. complete (for HT line) including hot-deep galvanizing of the complete cross arm as per direction of engineer.	Each	1,892.00	1892	1892	1892
3.9	<u>SHACKLE / PIN / DISC TYPE INSULATOR</u>					
3.9.1	Providing and fixing 500 volt grade porcelain shackle type insulator of size 63 mm x 50.8 mm (2.5"x 2") as per BDS 1543.	Each	38.00	38	38	38
3.9.2	Providing and fixing 500 volt grade porcelain shackle type insulator of size 89 mm x 76 mm (3.5"x 3") as per BDS 1543.	Each	76.00	76	76	76
3.9.3	Providing and fixing of 11 KV Porcelain pin insulator and pins in/c. bolts etc. to existing pole top as per direction of engineer as per BDS 6038.	Each	820.00	820	820	820

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
3.9.4	11 KV Porcelain Disc insulator as per VDS 6038.	Each	2,018.00	2017	2017	2017
3.10	STAY Providing and fixing following pole stay made of stranded GI. wires complete with anchor plate of size 304.8 mm x 304.8 mm x 6.35 mm (1' x 1'x1/4"), 16 mm (5/8") dia stay rod of necessary length and frame bolts, guy insulator, nuts, with necessary adjusting arrangement complete as required to be placed within 30°- 45° angle with pole.					
3.10.1	8 SWG 7 strand	Each	1,892.00	1892	1892	1892
3.10.2	10 SWG 7 strand	Each	1,513.00	1513	1513	1513
3.10.3	12 SWG 7 strand	Each	1,387.00	1387	1387	1387
3.11	Overhead ASC Providing and drawing following PVC insulated aluminum stranded conductor in overhead line at proper sag complete with necessary GI binding wire as required as per BDS 1036.					
3.11.1	Cables manufactured by Govt. of Bangladesh owned / shared company Ltd. (Eastern cables) approved by the engineer.					
3.11.1.1	IC- 25 sq.mm (GNAT)	Meter	69.00	69	69	69
3.11.1.2	IC- 50 sq.mm (ANT)	Meter	120.00	120	120	120
3.11.1.3	IC- 75 sq.mm (EARWIG)	Meter	211.00	212	212	212
3.11.1.4	IC- 100 sq.mm (WASP)	Meter	218.00	218	218	218
3.11.2	Cable manufacturer(s) must have valid test certificate from internationally accredited laboratory (like CPRI, KEMA etc.) accepted / approved by the engineer.					
3.11.2.1	IC-25 sq.mm (GNAT)	Meter	69.00	69	69	69
3.11.2.2	IC-50 sq.mm (ANT)	Meter	120.00	120	120	120
3.11.2.3	IC-75 sq.mm (EARWIG)	Meter	211.00	212	212	212

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
3.11.2.4	IC-100 sq.mm (WASP)	Meter	218.00	218	218	218
3.12	ACSR CONDUCTOR Providing and drawing following aluminium conductor steel reinforced (ACSR) bare conductor in. Overhead line at proper sag complete with necessary GI binding wire as required as per BDS 1037.					
3.12.1	Cables manufactured by Govt. of Bangladesh owned / shared company Ltd. (Eastern cables) approved by the engineer.					
3.12.1.1	IC- 50 Sq.mm (RABBIT)	Meter	146.00	146	146	146
3.12.1.2	IC- 100 Sq.mm (DOG)	Meter	223.00	223	223	223
3.12.2	Cable manufacturer(s) must have valid test certificate from internationally accredited laboratory (like CPRI, KEMA etc.) accepted / approved by the engineer					
3.12.2.1	IC- 50 Sq.mm (RABBIT)	Meter	147.00	147	147	147
3.12.2.2	IC- 100 Sq.mm (DOG)	Meter	201.00	200	200	200
3.13	<u>GI WIRE / COPPER WIRE</u> Providing and drawing No. 2-10 SWG GI / hard drawn bare copper wire in overhead line at proper sag complete with necessary binding wire as required as per direction of the engineer.					
3.13.1	GI. wire	Kg.	156.00	156	156	156
3.13.2	H.D.B.C. wire.	Kg.	1,354.00	1355	1355	1355
3.14	<u>SERVICE BELT</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Providing and fixing standard bi-metallic 'U' type service belt complete with 10 mm dia bare copper conductor at the middle and aluminum conductor at the ends with necessary insulation complete as required.	Set	164.00	164	164	164
3.15	<u>CLAMPS</u>					
3.15.1	Providing and fixing standard service clamp for jointing service cable with the overhead conductor complete as required	Set	139.00	139	139	139
3.15.2	Providing and fixing PG clamp with the conductor (for HT line) as per direction of engineer.	Each	295.00	295	295	295
3.15.3	Providing and fixing of 11 KV tension clamp to fix at disc insulator, fixing of 11 KV conductor with the tension clamp including hot deep galvanizing as per direction of engineer.	Each	691.00	691	691	691
3.15.4	Providing and fixing riz iron clamp fixing 11KV pin insulator, top of the HT pole (with nut bolts) including hot deep galvanizing complete as per direction of engineer.	Each	691.00	691	691	691
3.15.5	Providing and fixing clamp type side mounted bracket for fixing 11KV pin insulator (with nut bolts) including hot deep galvanizing complete as per direction of engineer.	Each	1,301.00	1301	1301	1301
3.16	<u>CATENARY WIRING FOR SERVICE CONNECTION</u>					
	Catenary wiring with the following PVC insulated and sheathed cables (NYY) properly clipped with 8 SWG GI supporting wire properly strained with clamps, nuts, bolts etc. including shackle type insulator at both ends.					
3.16.1	Cables manufactured by Govt. of Bangladesh owned / shared company Ltd (Eastern cables) approved by the engineer.					
3.16.1	IC-2 x 2.5 sq.mm	Meter	178.00	179	179	179

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
3.16.2	IC-2 x 4 sq.mm	Meter	253.00	253	253	253
3.16.3	IC-2 x 6 sq.mm	Meter	334.00	334	334	334
3.16.4	IC-2 x 10 sq.mm	Meter	504.00	505	505	505
3.16.5	IC-4 x 2.5 sq.mm	Meter	357.00	357	357	357
3.16.6	IC-4 x 4 sq.mm	Meter	505.00	505	505	505
3.16.7	IC-4 x 6 sq.mm	Meter	668.00	668	668	668
3.16.2	Cable manufacturer(s) must have valid test certificate from internationally accredited laboratory (Like CPRI, KEMA etc.) accepted / approved by the engineer					
3.16.2.1	IC-2 x 2.5 sq.mm	Meter	138.00	139	139	139
3.16.2.2	IC-2 x 4 sq.mm	Meter	194.00	194	194	194
3.16.2.3	IC-2 x 6 sq.mm	Meter	271.00	271	271	271
3.16.2.4	IC-2 x 10 sq.mm	Meter	401.00	401	401	401
3.16.2.5	IC-4 x 2.5 sq.mm	Meter	277.00	276	276	276
3.16.2.6	IC-4 x 4 sq.mm	Meter	389.00	388	388	388
3.16.2.7	IC-4 x 6 sq.mm	Meter	542.00	542	542	542
3.17	<u>SERVICE BRACKET</u>					
3.17.1	Providing and fixing of 1524 mm (5') long 25.40 mm (1") dia GI. pipe service bracket complete with 1 no. of GI bend 2 nos. fixing clamps of 38.10 mm x 6.35 mm (1.5"x ¼") size iron flat bar bolts, nuts etc. complete as required.	Each	1,234.00	1234	1234	1234
3.17.2	Providing and fixing of 1524 mm (5') long 38.1 mm (1.5") dia GI. pipe service bracket complete with 1 no. of GI bend 2 nos. fixing clamps of 38.10 mm x 6.35 mm (1.5" x ¼") size iron flat bar bolts, nuts etc. complete as required.	Each	1,601.00	1601	1601	1601

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
3.18	<u>AERIAL FUSE</u> Providing and fixing 500V grade porcelain base rewire able type aerial service fuse unit of the following capacity : -					
3.18.1	Suitable for use up to 15 Amps	Each	116.00	115	115	115
3.18.2	Suitable for use up to 30 Amps	Each	128.00	128	128	128
3.18.3	Suitable for use up to 60 Amps	Each	143.00	143	143	143
3.18.4	Suitable for use up to 100 Amps	Each	173.00	173	173	173

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Subhead 4
Boards & Controls

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
4.1	<u>SUB DISTRIBUTION BOARD (SDB)</u> Providing & fixing 250V, 50 Hz grade following concealed type sub-distribution board made of 18-SWG MS sheet complete with hinged type door, built-in type locking arrangement, one no. 60 A capacity bus-bar with required no. of holes thereon on insulators at both ends, copper blocks for neutral and earth terminal, SPMCBs Manufactured / Assembled and tested in accordance with IEC / VDE / NEMA / BS / JIS along with relevant BDS IEC standard having minimum breaking capacity 6 / 10-KA with thermal over current and instantaneous electromagnetic short circuit release, necessary arrangement for fixing of MCBs duly painted with powder coating with epoxy polyester resin on all surfaces of board (gray / off-white) etc. In front side there will be tempered thick fiber glass of minimum 8 mm thickness with rubber gaskets etc. with SPMCBs accepted / approved by the Engineer-in-charge.					
4.1.1	3-Way SDB (with box size minimum 220mm x 132mmx148mm) in-coming :1 x 20 amps (6 KA) & out-going: 3 x 5 / 10 amps SPMCB(6 KA).	Each	4,420.00	4419	4414	4414
4.1.2	4-Way SDB (with box size minimum 220mmx 132mmx148mm) in-coming : 1 x 30 amps (6 KA) & out-going :4 x 5 / 10 / 15 amps SPMCB (6 KA) .	Each.	5,177.00	5176	5171	5171
4.2	<u>SINGLE PHASE DISTRIBUTION BOARD (SPDB)</u> Providing and fixing single phase distribution board (SPDB) [concealed / surface] having the following components and specifications: [Fig : 4.2]					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	1. Steel board : Approximate size: 20"x15"x4" MS sheet : 18SWG with hinged type door and locking arrangement duly painted with powder coating with epoxy polyester resin on all surfaces of board (gray / off-white) etc. In front side there will be tempered thick fiber glass of minimum 8 mm thickness with rubber gaskets to observe the inside arrangement. 2. Copper bar: Approximate size: 10"x 1"x 3mm(2 nos) and 6"x 1"x 3mm, (1 no) mounted on insulator at both ends, capacity: 60-100A . 3. 1 No. DPMCB(main control) and following nos.SPMCB, DPMCB and SPMCB Manufactured / Assembled and tested in accordance with relevant BDS IEC 60898-1:2016 and IEC / VDE / NEMA / BS / JIS standard. Minimum breaking capacity 6/10 KA with thermal overcurrent and instantaneous electromagnetic short circuit release. 4. Loop Cable [from phase bar to SPMCB(circuit & power)] Size: 1C-1x2.5 sq mm (BYM) with DPMCB and SPMCBs accepted / approved by the Engineer-in-charge.					
4.2.1	6-way SPDB					
	Incoming : 1x40A DPMCB (6 KA)					
	Outgoing : 6x5-10A SPMCB (6 KA)	Each.	13,185.00	13184	13179	13179
4.2.2	8-way SPDB					
	Incoming : 1x50A DPMCB (10 KA)					
	Outgoing : 8x5-10A SPMCB (10 KA)	Each.	14,572.00	14570	14565	14565
4.2.3	10-way SPDB					
	Incoming : 1x60A/63A DPMCB (10 KA)					
	Outgoing : 10x5-10A SPMCB (10 KA)	Each.	17,031.00	17029	17024	17024
4.3	<u>THREE PHASE DISTRIBUTION BOARD (TPDB)</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Providing and fixing three phase distribution board (TPDB) [concealed / surface] having the following components and specifications: [Fig : 4.3]					
	1. Steel board : Approximate size 36"x30"x6" MS sheet:18SWG with hinged type door and locking arrangement duly painted with powder coating with epoxy polyester resin on all surfaces of board (gray / off-white) etc. In front side there will be tempered thick fiber glass of minimum 8 mm thickness with rubber gaskets to observe the inside arrangement.					
	2. Copper bar : size 12"x1"x6 mm(4 No's) and 6"x1"x5mm(1 No) mounted on insulator at both ends. Capacity : 200-300A					
	3. 1 no. TPMCCB (main control) and following nos. TPMCCB for feeders. TPMCCB's are Manufactured / Assembled and tested in accordance with IEC / VDE / NEMA / BS / JIS along with relevant BDS IEC standard. Minimum breaking capacity 10-16 KA with thermal overcurrent and instantaneous electromagnetic short circuit release.					
	4. Loop Cable: From phase bar to TPMCCB (circuit & power) Cable Size: As required compatible with circuit breaker with TPMCCBs accepted / approved by the Engineer-in-charge.					
4.3.1	100A TPDB Incoming : 1x100A TPMCCB (10 KA) Outgoing: 6x10-20A TPMCCB (10 KA)	Each.	66,068.00	66066	66058	66058
4.3.2	150A TPDB Incoming : 1x150A TPMCCB (16 KA) Outgoing: 8x10-30A TPMCCB (10 KA)	Each.	86,246.00	86243	86236	86236
4.3.3	200A TPDB Incoming : 1x200A TPMCCB (16 KA) Outgoing: 10x10-30A TPMCCB (10 KA)	Each.	108,946.00	108942	108935	108935
4.4	<u>CIRCUIT BREAKER (SPMCB)</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Providing & fixing on a prepared board 250 volt grade following single pole miniature circuit breaker (SPMCBs) having minimum breaking capacity 6-KA / 10 KA with thermal over-current and instantaneous electromagnetic short circuit release provision as per BDS IEC and IEC / VDE / NEMA / BS / JIS standard.					
4.4.1	SPMCBs accepted / approved by the Engineer-in-charge.					
4.4.1.1	5 - 40 Amps (minimum 6 KA) MCB	Each	802.00	802	801	801
4.4.1.2	60/63 Amps (minimum 10 KA) MCB	Each	991.00	991	990	990
4.5	<u>TPMCB</u>					
	Providing & fixing on a prepared board 500 volt grade following Triple pole miniature circuit Breaker (TPMCB) having minimum breaking capacity 6-KA/ 10 KA with thermal over-current and instantaneous electromagnetic short circuit release provision as per BDS IEC and IEC / VDE / NEMA / BS / JIS standard.					
4.5.1	TPMCBs accepted / approved by the Engineer-in-charge.					
4.5.1.1	5 - 60 Amps.	Each	4,142.00	4142	4140	4140
4.6	<u>TPMCCB</u>					
	Providing & fixing on a prepared board 500 volt grade following triple-pole molded case circuit breaker (TPMCCB) with thermal over-current and instantaneous electromagnetic short circuit release provision, Manufactured / Assembled and tested in accordance with IEC / VDE / NEMA / BS / JIS along with relevant BDS IEC standard.					
	TPMCCBs accepted / approved by the Engineer-in-charge.			0	0	0
4.6.1	15 - 100 Amps. (Minimum 10-KA)	Each	7,673.00	7673	7671	7671

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
4.6.2	120 - 200 Amps. (Minimum 16-KA)	Each	9,060.00	9060	9057	9057
4.7	<u>BUSBAR</u> Providing and fixing 500 V 3-phase busbar system assembled in prelaidd board with porcelain insulators. There will be equal size holes on every bar at 0.5" interval and bar to bar gap shall be 2" - 3".					
4.7.1	<u>60 - 100 Amps.</u> Copper flat bar (5 nos) : 4 nos 9" x1"x3mm and 1 no 4"x1"x4mm for earthing mounted on insulator at both ends individually.	Each	2,615.00	2615	2614	2614
4.7.2	<u>200 - 300 Amps.</u> Copper flat bar (5 nos) : 4 nos 15"x1"x8mm and 1 no 4"x1"x8mm for earthing mounted on insulator at both ends individually.	Each	6,398.00	6398	6397	6397
4.7.3	<u>400 - 500 Amps.</u> Copper flat bar (5 nos) : 4 nos 18"x1.5"x10mm and 1 no 4"x1.5"x10mm for earthing mounted on insulator at both ends individually.	Each	7,912.00	7911	7910	7910
4.7.4	<u>600 - 800 Amps.</u> Copper flat bar (5 nos) : 4 nos 18"x2"x10mm and 1 no 4"x2"x10mm for earthing mounted on insulator at both ends individually.	Each	10,686.00	10685	10684	10684
4.7.5	<u>900 - 1000 Amps.</u> Copper flat bar (5 nos) : 4 nos 20"x2"x12mm and 1 no 4"x2"x12mm for earthing mounted on insulator at both ends individually.	Each	14,217.00	14217	14216	14216
4.8	<u>BUSBAR TRUNKING SYSTEM</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply and fixing bus bar trunking system (800 A and above) both feeder and plugging having the following specification :- Rated operation voltage 1000V 3-phase, 5 wire . All bus-bar trunking products and fixing (straight length, elbow, tees, flanged ends, cable tap box and circuit breaker etc.) shall be in accordance with IEC61439 ; 2012 or UL 857 and from the same manufacturer as per bus bar trunking system. Short circuit rating : 800 A - 1000 A (40-60 KA/sec) 2500 A - 4000 A (165 -220 KA/sec) Housing: Constructed of code gauge steel and aluminum to reduce hysteresis and eddy current losses. It shall be totally enclosed non ventilated and anticorrosive ability. Bus bar: Hard drawn silver plated high conductivity copper of 99.9% purity. Bus-bar insulation :Class B or class F rated polyester film. (no epoxy insulation) . Joint: Bus bar trunking joint shall be of the one-bolt type and shall be possible to remove any joint connection assembly to allow electrical isolation of bus bar trunking length. Indoor feeder and plug-in trunking shall be hanged 3 meters horizontally and 4.88 meters vertically spacing. Line to line voltage drop shall not exceed 4% when connected at full load. Temperature rise at any point of the bus bar trunking enclosure shall not exceed 55°C.					
4.8.1	Bus bar trunking system with flange, elbow, plug in points and fixing supports.					
4.8.1.1	800 A	meter	141,428.00	141426	141423	141423
4.8.1.2	1000 A	meter	146,473.00	146470	146468	146468
4.8.1.3	1250 A	meter	150,256.00	150253	150251	150251
4.8.1.4	1600 A	meter	157,823.00	157819	157817	157817
4.8.1.5	2000 A	meter	196,917.00	196913	196910	196910

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
4.8.1.6	2500 A	meter	261,233.00	261227	261225	261225
4.8.1.7	3200 A	meter	319,243.00	319238	319235	319235
4.8.1.8	4000 A	meter	386,082.00	386074	386072	386072
4.8.1.9	5000 A	meter	428,959.00	428951	428948	428948
4.8.2	Tap of box with TPMCCB of following ratings.					
4.8.2.1	16 A - 100 A	Each	35,638.00	35638	35634	35634
4.8.2.2	125 A - 160 A	Each	40,493.00	40493	40489	40489
4.8.2.3	200 A - 250 A	Each	43,331.00	43330	43327	43327
4.8.2.4	400 A	Each	75,804.00	75802	75800	75800
4.8.2.5	500 A	Each	106,070.00	106068	106066	106066
4.8.2.6	630 A	Each	157,775.00	157772	157770	157770
4.8.2.7	800 A	Each	259,609.00	259605	259602	259602
4.9	<u>BOARD</u>					
	Supplying and fixing of almirah type 18 SWG metal board of depth 228mm (6") duly painted with powder coating with epoxy polyester resin on all surfaces of board (gray / off-white) having built in push type / suitable locking arrangement including metal bridges of suitable size for fixing of all electrical control devices complete with suitable anchoring arrangement in wall / column and keeping provision					
	for cable inlets and exits as required (only front surface of the board will be considered for measurement) accepted/approved by the Engineer-in-charge.					
4.9.1	Normal board (without water tight)	Per sq.m	17,409.00	17408	17403	17403
4.9.2	With water tight arrangement.	Per sq.m	18,040.00	18039	18034	18034
4.9.3	<u>With Glass Cover</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	The front side of the boards should be covered with required size tempered thick fiber glass of minimum 8 mm thickness with rubber gaskets to observe the inside arrangement.	Per sq.m	19,301.00	19300	19295	19295
4.9.4	<u>Pedestal Type</u> Providing and fixing of pedestal type 18 SWG M.S. sheet steel board for outside use with proper reinforcement by M.S. flat bars, water tight arrangement duly painted with powder coated paint over prime anticorrosive red oxide coat fitted on floor with necessary cc work, angle iron clamps / legs as per direction of the Engineer.	Per sq.m	5,760.00	5758	5753	5753
4.9.5	<u>G.P. Sheet Board</u> Supplying and fixing of surface / concealed 18 SWG G.P. sheet board of 76.2 mm(3") depth(with open front) duly painted inner & outer surfaces with gray enamel paint, anchoring arrangement to be fitted in wall (only back surface of the board will be considered for measurement).	Per sq.m	6,887.00	6887	6886	6886
4.9.6	<u>PVC Board</u> Supplying and fixing of surface / concealed type self-extinguishing PVC board of 76.2 mm(3") depth (with open front) duly painted inner & outer surfaces with anchoring arrangement to be fitted in wall (only back surface of the board will be considered for measurement).	Per sq.m	6,130.00	6130	6128	6128
4.9.7	<u>Ebonite Sheet</u> Providing and fixing of 3mm.thick ebonite sheet cover including making hole / groove etc. as required.	Per sq.m	1,685.00	1684	1683	1683
4.10	<u>SOCKET OUTLETS</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Providing & fixing 250 volt single phase 3-pin combined switch socket outlet (surface / Concealed type) Manufactured / Assembled and tested in accordance with IEC / VDE / NEMA / BS / JIS along with relevant BDS IEC standard, mounted on required size 18 SWG galvanized plain sheet board / Plastic Board (Self-extinguishing 650 degree centigrade) of 76.2 mm. (3") depth. (Manufacturer shall have certificate of standard which they follow).					
4.10.1	<u>13 / 15 / 16 / 20 Amps.</u>					
4.10.1.1	Made in ENGLAND / GERMANY / JAPAN / USA or EU countries	Each	1,096.00	1096	1096	1096
4.10.1.2	Made in HONGKONG / MALAYSIA / SINGAPORE / S KOREA / THAILAND	Each	515.00	514	514	514
4.10.1.3	Assembled and made in BANGLADESH / CHINA / INDIA / TURKEY / VIETNAM	Each	395.00	394	394	394
4.10.2	<u>5 - 10 Amps.</u>					
4.10.2.1	Made in ENGLAND / GERMANY / JAPAN / USA or EU countries .	Each.	937.00	936	936	936
4.10.2.2	Made in HONGKONG / MALAYSIA / SINGAPORE / S KOREA / THAILAND	Each.	748.00	747	747	747
4.10.2.3	Assembled and made in BANGLADESH / CHINA / INDIA / TURKEY / VIETNAM	Each.	332.00	331	331	331
4.11	UNIVERSAL COMBINED SWITCH SOCKET OUTLET (SURFACE/CONCEALED TYPE)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Providing & fixing 250 volt single phase universal combined switch socket outlet (surface / concealed type) Manufactured/ Assembled and tested in accordance with IEC / VDE / NEMA / BS / JIS along with relevant BDS IEC standards mounted on required size 18 SWG galvanized plain sheet board / plastic board (self-extinguishing 650 degree centigrade) of 76.2 mm. (3") depth. Sample to be approved by the Engineer-in-charge. Manufacturer shall have certificate of standard which they follow.					
4.11.1	<u>13 / 15 / 16 / 20 Amps.</u>					
4.11.1.1	Made in HONGKONG / MALAYSIA / SINGAPORE / S KOREA / THAILAND	Each.	969.00	968	968	968
4.11.1.2	Assembled and made in BANGLADESH / CHINA / INDIA / TURKEY / VIETNAM	Each.	433.00	432	432	432
4.11.2	<u>5 - 10 Amps.</u>					
4.11.2.1	Made in HONGKONG / MALAYSIA / SINGAPORE / S KOREA / THAILAND	Each.	735.00	735	735	735
4.11.2.2	Assembled and made in BANGLADESH / CHINA / INDIA / TURKEY / VIETNAM	Each.	458.00	457	457	457
4.12	<u>GANG SWITCH.</u>					
	Providing & fixing 250 volts. 5 / 6 amps (minimum) concealed type following switch / switch socket Manufactured / Assembled and tested in accordance with IEC / VDE / NEMA / BS / JIS along with relevant BDS IEC standards mounted on required size 18 SWG galvanized plain sheet / PVC board (Self-extinguishing 650 Degree Centigrade) of 76.2 mm (3") depth. All electrical contacts shall be of brass / copper.					
4.12.1	<u>MADE IN ENGLAND / GERMANY / JAPAN / USA or EU countries</u>					
4.12.1.1	One gang switch	Each.	590.00	590	590	590

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
4.12.1.2	Two gang switch	Each.	977.00	976	976	976
4.12.1.3	Three gang switch	Each.	1,498.00	1497	1497	1497
4.12.1.4	One gang switch & one 5/10 amps. 2-pin socket combined.	Each.	1,359.00	1359	1359	1359
4.12.2	<u>MADE IN HONGKONG / MALAYSIA / SINGAPORE / S KOREA / THAILAND</u>					
4.12.2.1	One gang switch	Each.	224.00	224	224	224
4.12.2.2	Two gang switch	Each.	386.00	385	385	385
4.12.2.3	Three gang switch	Each.	528.00	528	528	528
4.12.2.4	Four gang switch	Each.	784.00	784	784	784
4.12.2.5	One gang switch & one 5/10 Amps. 2-pin socket combined.	Each.	526.00	525	525	525
4.12.2.6	20 AMP DP Switch	Each.	956.00	955	955	955
4.12.3	<u>ASSEMBLED AND MADE IN BANGLADESH / CHINA / INDIA / TURKEY / VIETNAM</u>					
4.12.3.1	One gang switch	Each.	155.00	154	154	154
4.12.3.2	Two gang switch	Each.	206.00	205	205	205
4.12.3.3	Three gang switch	Each.	250.00	249	249	249
4.12.3.4	Four gang switch	Each.	332.00	331	331	331
4.12.3.5	One gang DP switch with Neon and earth	Each.	444.00	443	443	443
4.12.3.6	One gang switch & one 5/10 Amps. 2-pin socket combined.	Each.	332.00	331	331	331
4.13	<u>GANG TYPE FAN REGULATOR</u>					
4.13.1	Made in ENGLAND / GERMANY / JAPAN / USA or EU countries .	Each.	1,568.00	1567	1567	1567
4.13.2	Made in HONGKONG / MALAYSIA / SINGAPORE / S KOREA / THAILAND	Each.	1,219.00	1219	1219	1219
4.13.3	Assembled and made in BANGLADESH / CHINA / INDIA / TURKEY / VIETNAM	Each.	609.00	608	608	608
4.14	<u>GANG TYPE CALLING BELL PUSH</u>					
4.14.1	Made in ENGLAND / GERMANY / JAPAN / USA or EU countries .	Each.	1,025.00	1025	1025	1025

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
4.14.2	Made in MALAYSIA / THAILAND / SINGAPORE / HONGKONG / S.KOREA	Each.	496.00	495	495	495
4.14.3	Assembled and made in BANGLADESH / CHINA / VIETNAM / INDIA / TURKEY	Each.	206.00	205	205	205
4.15	<u>GANG TYPE TELEPHONE/TV SOCKET</u>					
4.15.1	Made in ENGLAND / GERMANY / JAPAN / USA or EU countries .	Each.	1,458.00	1457	1457	1457
4.15.2	Made in HONGKONG / MALAYSIA / SINGAPORE / S KOREA / THAILAND	Each.	626.00	625	625	625
4.15.3	Assembled and made in BANGLADESH / CHINA / INDIA / TURKEY / VIETNAM	Each.	275.00	274	274	274
4.16	<u>DATA/INTERNET SOCKET</u>					
4.16.1	Made in Malaysia / Thailand / Singapore / Hongkong or equivalent Country	Each.	1,126.00	1125	1125	1125
4.16.2	Assembled and Made in Bangladesh / Made in China	Each.	414.00	413	413	413
4.17	<u>CALL BELL</u>					
4.17.1	Providing & fixing ding dong 250 V grade call bell on prepared board including required length of PVC twin flexible cord etc. complete.	Each.	779.00	779	779	779
4.17.2	Providing & fixing 250V, 50 Hz grade remote control call bell complete (foreign made).	Each.	937.00	936	936	936
4.18	<u>CHANGE OVER SWITCH</u>					
	Providing & fixing of 18 SWG metal clad 500 volt 3 phase two way manual change-over switch of following capacity complete with moving & fixed copper contacts, copper buses, brass nuts and bolts, 3mm thick ebonite sheet separators insulators, operating handle etc. complete including necessary hammer painting on enclosure.					
4.18.1	60 -100 Amps. rating.	Each.	4,168.00	4166	4161	4161

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
4.18.2	100-300 Amps. rating.	Each.	6,942.00	6941	6936	6936
4.18.3	400-600 Amps. rating.	Each.	13,248.00	13246	13241	13241
4.18.4	800-1000 Amps. rating.	Each.	15,266.00	15264	15259	15259
4.19	<u>EARTHING</u> Earthing the electrical installation with 40 mm (1.5") dia G.I. pipe (earth electrode) having 6.35 mm. dia hole across the pipe at 305 mm. interval securely bonded by soldering with 2 nos. of No-2 SWG HDBC earth leads (at the top of the electrode) with its protection by 20 mm. (3/4") dia G.I. pipe up-to plinth level run at a depth of 609.6 mm (2 ft) below G.L up-to main board to be earthed including necessary connecting copper sockets, bolts, nuts, etc. complete for maintaining earth resistance within 1 ohm. [Fig : 4.19]					
4.19.1	Depth of bottom of main electrode at 6858 mm. (22.5 ft) from GL & length of electrode 6096 mm. (20 ft).	Per Set.	25,474.00	25473	25473	25473
4.19.2	Depth of bottom of main electrode at 12954 mm. (42.5 ft) from GL & length of electrode 12192 mm. (40 ft).	Per Set.	30,266.00	30266	30266	30266
4.19.3	Depth of bottom of main electrode at 19050 mm. (62.5 ft) from GL & length of electrode 18288 mm. (60 ft).	Per Set.	35,941.00	35941	35941	35941
4.19.4	Depth of bottom of main electrode at 25146 mm. (82.5 ft) from GL & length of electrode 24384 mm. (80 ft).	Per Set.	42,247.00	42246	42246	42246
4.19.5	Depth of bottom of main electrode at 31242 mm. (102.5 ft) from GL & length of electrode 30480 mm. (100 ft).	Per Set.	46,661.00	46660	46660	46660
4.19.6	Depth of bottom of main electrode at 37338 mm. (122.5 ft) from GL & length of electrode 36576 mm. (120 ft).	Per Set.	52,966.00	52965	52965	52965

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
4.20	Construction of earthing inspection pit inside measurement 600 mm x 600 mm with 250 mm thick brick in cement mortar (1:4) with 100mm thick RCC top slab (1:2:4) with 1% re-enforcement 450 mm dia water sealed CI man-hole cover with locking arrangement including necessary earth works, site filling and one brick flat soling 75 mm thick (1:3:6) base concrete for making inlet channel & 12mm thick (1:2) cement plaster with neat finishing etc. all complete up to a depth of .75 meter.	Each	7,567.00	7566	7566	7566
4.21	<u>LIGHTNING ARRESTER</u>					
4.21.1	<u>LIGHTNING ARRESTER (Up to 6-storied building)</u> Providing & fixing 25.4 mm (1") dia 457 mm (1.5 ft) long solid copper rod with 6.6 mm thick 150 mm x 150 mm copper made base with sharp end top, fixed on the top of 2.0"(2.5 - 3 mm thick) dia 10' long GI pole by necessary accessories . The pole shall fixed on parapet wall with necessary CC work and other accessories for arresting lightning as per plan (enclosed) and as per direction of the Engineer. [Fig : 4.21]	Per Set.	7,778.00	7777	7772	7772
4.21.2	Providing & drawing no-2 HDBC wire through 12.7 mm. (½") dia G.I. pipe including fitting, fixing the G.I. pipe in wall or column complete as required.	Per meter	1,165.00	1164	1163	1163
4.22	<u>LIGHTNING ARRESTER</u>					
4.22.1	(Above 6-storied building) (Item no : 4.22.1 - 4.22.9) Supply, installation, testing and commissioning early streamer Emission Air Terminal (ESEAT)/ Collection Volume Method (CVM) as per IEEE 998-2012 or equivalent product having the following technical specification - (i) Withstand Peak Lightning Current : 100 KA (ii) Weather condition of work : Material of lightning Air Terminal should be able to work in any environmental condition. So, material of Air Terminal should be stainless steel.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
(iii)	Dimension of the air terminal : Minimum length : 220 mm 25mm dia solid rod at the bottom of the Air Terminal having M20 male thread to fix on mast.					
(iv)	Certified advance Time : Maximum 60μ second with a current peak higher than 100 KA.					
(v)	Material of the Air Terminal : Stainless steel					
(vi)	Weight : 2.25 – 4.00 kg.					
(vii)	Radius of protection : 90 – 100 meter at 5 meter height from the plan.					
(viii)	Product certification and standards: System should compliant to UL-96 (lightning protection component) (standard of safety)					
(ix)	Manufactured / Assembled and made in : USA / FRANCE / AUSTRALIA or EU countries.	Each	319,058.00	319052	319052	319052
4.22.2	Supply and installation of insulated Air Terminal mast of the following specification - Made of stainless steel (Type : 316) Length : 2300 mm Dia : 30mm The mast shall be fixed on the top of the GI tower with SS nuts bolts, clamps as per sample approved by the Engineer-in-charge.	Each	18,381.00	18380	18380	18380
4.22.3	Supply and installation of lightning event counter of the following technical specification - Register capacity : 0-999 mechanical counting without external power supply (LCD display) The down conductor shall pass the hole of the counter and the same shall be fixed vertically at any point.	Each	50,759.00	50759	50759	50759
4.22.4	Supply and installation of earth test box with the following arrangement inside it. Test Joint : (79mm x 50mm x 20mm) made of copper. 30mm x 2mm and dia 8mm, line coupling made of copper.	Each	1,545.00	1545	1545	1545

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
4.22.5	Supply and drawing of copper made down conductor having dia 12.7 mm or copper strip (30mmx2mm) with fixing holder on vertical and horizontal surface. The fixing shall have 40mm to 50mm length or height and will be placed 3 nos per meter as per direction and sample approved by the Engineer-in-charge .	meter	2,324.00	2324	2324	2324
4.22.6	Construction of GI tower with the following specification - GI Pole: Dia 3", Length: 15' (L-10', D-3"; L-5', D- 2") duly painted with powder coating with epoxy polyester resin . There will be minimum three Guy-wire for erection of the pole properly. The base of the pole and guy will be installed by CC on the roof-top and the size will be as required to hold the pole at any circumstances.	Each	13,620.00	13619	13619	13619
4.22.7	Construction of earthing (2 nos.) for the lightning arrester as per instruction and enclosed diagram (Fig : 4.21) and as per direction of the Engineer in the following way-					
(i)	Soil digging : Size – 3000mmx400mmx400mm (2 nos.)					
(ii)	Construction of pit by brick and RCC slab on it. On the top of the slab there will be a hole and a pit cover made by cast iron will be fixed on it.					
(iii)	Size of the pit : (600mmx600mmx600mm) (2 nos.)					
(iv)	Copper plate : (300mmx150mmx15mm) (2 nos.) Copper plate will be fixed with the electrode (copper rod or copper strip) by necessary fixing materials made of copper.					
(v)	Copper electrode (12.7mm dia copper rod or copper strip (30mmx2mm) Length of the copper rod or strip : minimum 3000mm (10+10) = 20 meter.					
(vi)	Ground enhancing materials (40 + 40) = 80 kg. (2 Nos. of earthing is considered 1 set)	job	157,637.00	157634	157634	157634

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
4.22.8	Surge protection device (SPD) for protection of over-head line connected to LT line. Capacity : 50 KA 4-pole with wiring and SPD box. Made in GERMANY / AUSTRALIA / SPAIN or product of EU countries.	Set.	55,804.00	55803	55803	55803
4.22.9	Supply and installation of Aviation light fittings with LED Lamp, day light sensor, wiring by 1C-2x1.5 sq.mm cable (NYY) with ECC as per instruction and sample approved by the Engineer-in-charge. The Aviation Light fitting shall be fixed on GI pipe (GI Bracket) with necessary fixing materials shown in the fig - 4.22, below the Air Terminal.	Each	11,129.00	11129	11129	11129
4.23	<u>CABLE KITS</u> Supply & fixing of heat shrink joint kit complete with DIN ferrules, cable preparation kits at the point of jointing of cables for 11 KV 3-core PVC insulated & PVC sheathed armored / non-armored cables of the following sizes:- (Made in GERMANY / JAPAN / USA / UK / FRANCE / JAPAN / ITALY / SWEDEN / SWITZERLAND accepted/approved by the Engineer-in-charge)					
4.23.1	3 x 35 mm ²	Per kit	18,119.00	18117	18112	18112
4.23.2	3 x 50 mm ²	Per kit	19,128.00	19126	19121	19121
4.23.3	3 x 70 mm ²	Per kit	20,389.00	20387	20382	20382
4.23.4	3 x 95 mm ²	Per kit	21,272.00	21270	21265	21265
4.23.5	3 x 120 mm ²	Per kit	22,533.00	22531	22526	22526
4.23.6	3 x 150 mm ²	Per kit	23,668.00	23666	23660	23660

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
4.23.7	3 x 185 mm ²	Per kit	25,055.00	25053	25048	25048
4.23.8	3 x 240 mm ²	Per kit	28,838.00	28836	28831	28831
4.24	HEAT SHRINK TERMINATION KIT Supply & fixing of heat shrink termination kit out-door / in-door use complete with DIN lugs earth connection hardware & cable preparation kit (In-door & outdoor) at the point of cable termination for 11 KV 3-core PVC insulated & PVC sheathed & armored / non-armored cable of the following sizes (Made in GERMANY / USA / UK / FRANCE / JAPAN / ITALY / SWEDEN / SWITZERLAND or equivalent accepted / approved by the Engineer-in-charge.)					
4.24.1	<u>FOR INDOOR USE</u>					
4.24.1.1	3 x 35 mm ²	Per kit	7,399.00	7398	7393	7393
4.24.1.2	3 x 50 mm ²	Per kit	8,030.00	8029	8023	8023
4.24.1.3	3 x 70 mm ²	Per kit	8,534.00	8533	8528	8528
4.24.1.4	3 x 95 mm ²	Per kit	8,913.00	8911	8906	8906
4.24.1.5	3 x 120 mm ²	Per kit	9,543.00	9541	9537	9537
4.24.1.6	3 x 150 mm ²	Per kit	10,048.00	10046	10041	10041
4.24.1.7	3 x 185 mm ²	Per kit	10,552.00	10551	10546	10546
4.24.1.8	3 x 240 mm ²	Per kit	11,183.00	11182	11177	11177
4.24.2	<u>FOR OUTDOOR USE</u>					
4.24.2.1	3 x 35 mm ²	Per kit	10,489.00	10488	10483	10483
4.24.2.2	3 x 50 mm ²	Per kit	10,678.00	10677	10672	10672
4.24.2.3	3 x 70 mm ²	Per kit	11,057.00	11055	11050	11050
4.24.2.4	3 x 95 mm ²	Per kit	11,183.00	11182	11177	11177
4.24.2.5	3 x 120 mm ²	Per kit	11,309.00	11307	11302	11302
4.24.2.6	3 x 150 mm ²	Per kit	11,687.00	11685	11681	11681
4.24.2.7	3 x 185 mm ²	Per kit	12,318.00	12316	12311	12311

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
4.24.2.8	3 x 240 mm ²	Per kit	13,705.00	13704	13699	13699
4.25	Supplying and fitting of heat shrink joint kit complete with DIN ferrules & G.I armored case at the point of jointing of cables for 4-core / 1000 V grade PVC insulated & sheathed armored / non-armored cable of the following sizes Made in GERMANY / JAPAN / USA / UK / FRANCE / JAPAN / ITALY / SWEDEN / SWITZERLAND or accepted / approved by the Engineer-in-charge.					
4.25.1	4 x 35 mm ²	Per kit	3,490.00	3489	3484	3484
4.25.2	4 x 50 mm ²	Per kit	3,931.00	3930	3925	3925
4.25.3	4 x 70 mm ²	Per kit	4,562.00	4561	4556	4556
4.25.4	4 x 95 mm ²	Per kit	5,003.00	5002	4997	4997
4.25.5	4 x 120 mm ²	Per kit	5,760.00	5758	5753	5753
4.25.6	4 x 150 mm ²	Per kit	6,012.00	6011	6006	6006
4.25.7	4 x 185 mm ²	Per kit	6,517.00	6516	6511	6511
4.25.8	4 x 240 mm ²	Per kit	7,021.00	7019	7014	7014
4.26	<u>HEAT SHRINK SELF - AMALGAMATING TAPE</u> Supplying and fixing of heat shrink self-amalgamating tape of the following sizes for bus-bar of both HT switch-gear (11 KV) & LT switch-gear / PFI, transformer terminals as protection against flash-over.					
4.26.1.	Width 25 mm thickness 1 mm	Per meter	621.00	621	621	621
4.26.2	Width 50 mm thickness 1 mm	Per meter	867.00	867	867	867
4.26.3	Width 75 mm thickness 1 mm	Per meter	1,151.00	1151	1151	1151
4.26.4	Width 100 mm thickness 1 mm	Per meter	1,403.00	1403	1403	1403
4.27	<u>VOLTMETER</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
4.27.1	Providing and fixing voltmeter of range 0-500 volt as per sample approved by the Engineer-in-charge-in-charge (Origin: JAPAN / CHINA or accepted / approved by the Engineer-in-charge.)	Each	804.00	804	804	804
4.27.2	Providing and fixing 500 volt grade 4-way selector switch for voltmeter as per sample approved by the Engineer-in-charge-in-charge (Origin: JAPAN / CHINA or accepted / approved by the Engineer-in-charge.)	Each	552.00	552	552	552
4.28	<u>AMMETER</u> Providing and fixing 500 volt grade Ammeter of following range and as per sample approved by the Engineer-in-charge-in-charge (Origin: JAPAN / CHINA or accepted / approved by the Engineer-in-charge.)					
				0	0	0
4.28.1	0 - 50 amps.	Each	741.00	741	741	741
4.28.2	0-100 amps with Current Transformer (C.T) of ratio 100/5	Each	880.00	880	880	880
4.28.3	0-200 amps with Current Transformer (C.T) of ratio 200/5	Each	1,119.00	1119	1119	1119
4.28.4	0-300 amps with Current Transformer (C.T) of ratio 300/5	Each	1,151.00	1151	1151	1151
4.28.5	0-400 amps with Current Transformer (C.T) of ratio 400/5	Each	1,182.00	1182	1182	1182
4.28.6	0-600 amps with Current Transformer (C.T) of ratio 600/5	Each	1,195.00	1195	1195	1195
4.28.7	0-800 amps with Current Transformer (C.T) of ratio 800/5	Each	1,220.00	1220	1220	1220
4.28.8	0-1000 amps with Current Transformer (C.T) of ratio 1000/5	Each	1,245.00	1246	1246	1246
4.28.9	Providing and fixing 500 volt grade 3-way ammeter selector switch as per sample approved by the Engineer-in-charge-in-charge (Origin: JAPAN / CHINA or accepted / approved by the Engineer-in-charge.)	Each	527.00	526	526	526
4.29	<u>MAGNETIC CONTACTORS</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply & fixing 415 / 400/ 380 V magnetic contactors for AC3 duty having control circuit voltage 380-415V / 220-240V, 50Hz. SIEMENS / SCHNEIDER / TELEMECANIQUE / ABB / DORMAN SMITH / VITZRO as per International Standard or equivalent brand accepted / approved by the Engineer-in-charge of the following ratings .					
4.29.1	12A (Ith 27A) magnetic contactor	Each	3,153.00	3153	3153	3153
4.29.2	25A (Ith 45A) magnetic contactor	Each	4,540.00	4539	4539	4539
4.29.3	32A (Ith 55A) magnetic contactor	Each	9,837.00	9836	9836	9836
4.29.4	38A (Ith 60A) magnetic contactor	Each	14,503.00	14502	14502	14502
4.29.5	65A (Ith 115A) magnetic contactor	Each	24,087.00	24087	24087	24087
4.29.6	80A (Ith 125A) magnetic contactor	Each	30,266.00	30266	30266	30266
4.29.7	95A (Ith 145A) magnetic contactor	Each	35,311.00	35310	35310	35310
4.29.8	115A (Ith 200A) magnetic contactor	Each	50,444.00	50443	50443	50443
4.29.9	150A (Ith 250A) magnetic contactor	Each	63,055.00	63053	63053	63053
4.29.10	185A (Ith 275A) magnetic contactor	Each	75,666.00	75665	75665	75665
4.29.11	225A (Ith 315A) magnetic contactor	Each	88,277.00	88275	88275	88275
4.29.12	265A (Ith 350A) magnetic contactor	Each	100,888.00	100886	100886	100886
4.29.13	330A (Ith 400A) magnetic contactor	Each	107,193.00	107191	107191	107191
4.29.14	400A (Ith 500A) magnetic contactor	Each	113,499.00	113496	113496	113496
4.29.15	500A (Ith 500A) magnetic contactor	Each	132,415.00	132413	132413	132413
4.30	<u>THERMAL OVERLOAD RELAY</u>					
	Supply & fixing 415 / 400 / 380 V, 50 Hz thermal overload relay suitable for use with magnetic contactors accepted/approved by the Engineer-in-charge of the following ratings .					
4.30.1	0.40-8.50A	Each	1,740.00	1740	1740	1740
4.30.2	9-13A	Each	2,396.00	2396	2396	2396
4.30.3	7.5-14 A	Each	2,522.00	2522	2522	2522
4.30.4	13-32A	Each	3,027.00	3027	3027	3027
4.30.5	18-42A	Each	3,531.00	3531	3531	3531
4.30.6	28-40A	Each	4,792.00	4792	4792	4792

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
4.30.7	34-50A	Each	6,053.00	6053	6053	6053
4.30.8	36-100A	Each	7,440.00	7441	7441	7441
4.30.9	60-80A	Each	9,458.00	9458	9458	9458
4.30.10	90-110A	Each	12,611.00	12610	12610	12610
4.30.11	115-500A	Each	18,916.00	18916	18916	18916
4.30.12	300-500A	Each	25,222.00	25222	25222	25222
4.30.13	250-800A	Each	35,941.00	35941	35941	35941
4.31	<u>11 KV HRC FUSE</u>					
	Supply & fixing 11 KV HRC fuse of the following ratings .					
4.31.1	40 A (3 nos in 1 set)	Set	6,053.00	6053	6053	6053
4.31.2	50 A (3 nos in 1 set)	Set	7,440.00	7441	7441	7441
4.31.3	63 A (3 nos in 1 set)	Set	8,575.00	8575	8575	8575
4.31.4	100 A (3 nos in 1 set)	Set	9,458.00	9458	9458	9458
4.32	<u>CUT-OUT</u>					
	Supply & fixing 500 volt grade rewire able fuse link porcelain carrier cutout (foreign made) on prepared board of the following ratings .					
4.32.1	15 Amps. Rating	Each	38.00	38	38	38
4.32.2	30 Amps. Rating	Each	76.00	76	76	76
4.32.3	60 Amps. Rating	Each	151.00	151	151	151
4.32.4	100 Amps. Rating	Each	227.00	227	227	227
4.32.5	200 Amps. Rating	Each	441.00	441	441	441
4.33	<u>GALVANIZED CABLE TRAY</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, fitting and fixing galvanized cable tray made of 18 SWG (1.2 mm) MS Sheet evenly perforated with 7 mm width Capsule hole punch with self-Hanging Facility at top, joint clamp, including fabricating cost of electricity, tools and plants, workshop charges, carriage of the same, cutting groves in the RCC or brick work, mending good the damages with CC (1:2:4), etc. complete for all floors accepted by the engineer.					
4.33.1	100x50 mm without cover	Meter	1,450.00	1450	1450	1450
4.33.2	200x50 mm without cover	Meter	1,797.00	1797	1797	1797
4.33.3	300x100 mm without cover	Meter	2,396.00	2396	2396	2396
4.33.4	500x100 mm without cover	Meter	2,976.00	2976	2976	2976
4.34	<u>GALVANIZED CABLE LADDERS</u>					
	Supply, fitting and fixing of Galvanized cable ladders made of 14 SWG (2 mm) MS Sheet with rungs spaced of 300 mm centers, 100x25mm side rail with multiple formation to protect from torsion and bending with full loading capacity with self-Hanging Facility at top and bottom, joint clamp, including fabricating cost of electricity, tools and plants, workshop charges, carriage of the same, cutting groves in the RCC or brick work, mending good the damages with CC (1:2:4), etc. complete for all floors accepted by the engineer					
4.34.1	300x100 mm	Meter	4,414.00	4414	4414	4414
4.34.2	400x100 mm	Meter	5,044.00	5044	5044	5044
4.34.3	600x100 mm	Meter	6,179.00	6180	6180	6180
4.34.4	900x100 mm	Meter	7,819.00	7819	7819	7819

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ANNEXURE- 4

BUSBAR TRUNKING SYSTEM :

The low impedance prefabricated sand witch type main bus bar trunking system shall conform to IEC 439/1-2, tested Seismic standard shall be suitable for use in installation conforming to IEC 364.

The low impedance prefabricated sand witch type main bus bar trunking system shall conform to IEC 439/1-2, tested seismic standard shall be suitable for use in installation conforming to IEC 364.

SPECIFICATION OF BBT SYSTEM :

1	Standard : IEC 439-1 & 2, KEMA certificate	
2	Housing	: 2-piece aluminum (no duration till 55 °C)
3	Maximum ambient temperature	: 40 Deg.C
4	Degree of protection	: IP54
5	Color	: Approved color
6	Rated insulation voltage	: Maximum 600 V.A.C.
7	Frequency	: 50 Hz.
8	Rated current at 40 deg.C	: As per schedule
9	Minimum rated surge capacity (KA)(t=0.1s)	: To be quoted by the bidder.
10	Inherent short circuit capacity (KA) (t=0.1s)	: To be quoted by the bidder.
11	Rated short time with-stand current(KA) (t= 1 sec)	: To be quoted by the bidder. Mylar from Du-point or epoxy insulated Class B 130 °C.
12	Bus bar materials	: Aluminum and all conductors tinned and
13	Bus bar cross section	: To be mentioned by the bidder
14	Special features	: Single bolt clamping.
15	Others	: Drawings to be submitted for the proposed BBT system with detailed information, dimension, list of materials as per site requirement.

Tap-off units must be designed in such a way so that the tap-off units can be fitted or removed while the system i.e. the main bus bar trunking is energized.

Circuit breakers in the Tap-off units shall be of quick make, quick break, trip-free indicating type having adjustable thermal over-current and adjustable instantaneous electro-magnetic short circuit release having the rated interrupting capacity.

All the components of the BBT i.e. main bus bar length, reduction unit, fire barrier, fixing bracket, tap-off boxes with circuit breakers, elbows, tee, feed unit, end cover, expansion unit, etc. shall be from the same manufacturer. All the joint & contact surface shall be silver plated.

The components of BBT shall be appropriately as follows but the bidder must inspect the site and supply everything to complete total system.

BBT-1 :

1600A Distribution Board Connection Unit	: 1 No.
1600A Bends	: 2 Nos.
1600A Transformer connection unit	: 1 No.
1600A Straight length	: 5.00 meter (approx.)
Fire Barrier	: 1 Lot.
Hanger	:

BBT-2 :

1600A Distribution Board Connection Unit	: 1 No.

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1600A Bends	: 4 Nos.
1600A Straight length	: 40.00 meter (approx.)
Fire Barrier	: 1 Lot.
Hanger/floor support	: 2 Lot.
Tap-off boxes with 200A TP (50KA)	: 7 Nos.
Tap-off boxes with 160A TP (50KA)	: 1 No.
MCCB	
End Cap	: 1 No.

BBT-3 :

600A Distribution Board Connection Unit	: 1 No.

600A Bends	: 4 Nos.
600A Straight length	: 43.60 meter (approx.)
Fire Barrier	: 1 Lot.
Hanger/floor support	: 1 Lot.
Tap-off boxes with 160A TP (50KA)	: 1 No.
Tap-off boxes with 63A TP (50KA)	: 7 Nos.
MCCB	
500A End Cap	: 1 No.

INSTALLATION:

The BBT system shall be fixed on floor ceiling and walls with all necessary, cutting and breaking, cleaning and mending the same including cement/sand plastering and painting clamps, nuts, bolts as per the installation drawing of the manufacturer after getting approval from the owner / consultants. The contractor shall supply all materials required for complete installation of the BBT system.

EARTH RESISTANCE TEST

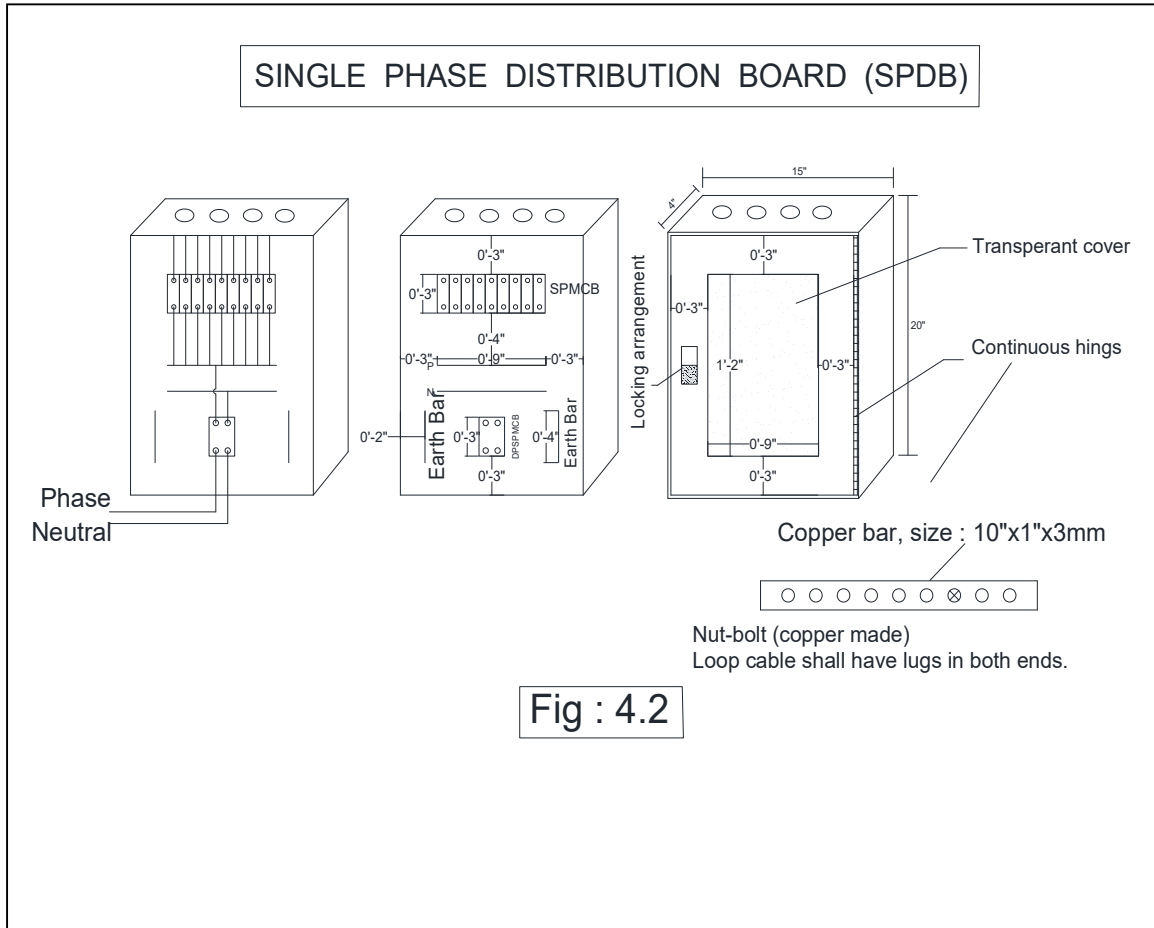
- 1) Earth resistance tests shall be made on the system, separating and reconnecting each earth connection.
- 2) The electrical resistance of the earth continuity conductor together with the resistance of the earthing lead measured from the connection with the earth electrode to any other position in the completed installation shall not exceed 1 ohm.
- 3) Where more than one earthing sets are installed, the earth resistance between two sets shall be measured by means of resistance bridge instrument. The earth resistance between two sets shall not exceed 1 ohm.

TABLE 4.1 : MINIMUM NUMBER OF SOCKET OUTLET

Minimum number of 13 A sockets outlets

Location	Number of switch socket outlets
Bed Room	2

Living Room	3
Drawing Room	3
Dining Room	1
Toaster/Snack Toaster	1
Kitchen Room	1
Bathroom	0
Verandah	1
For refrigerator	1
For air conditioner	One for each room



THREE PHASE DISTRIBUTION BOARD (TPDB)

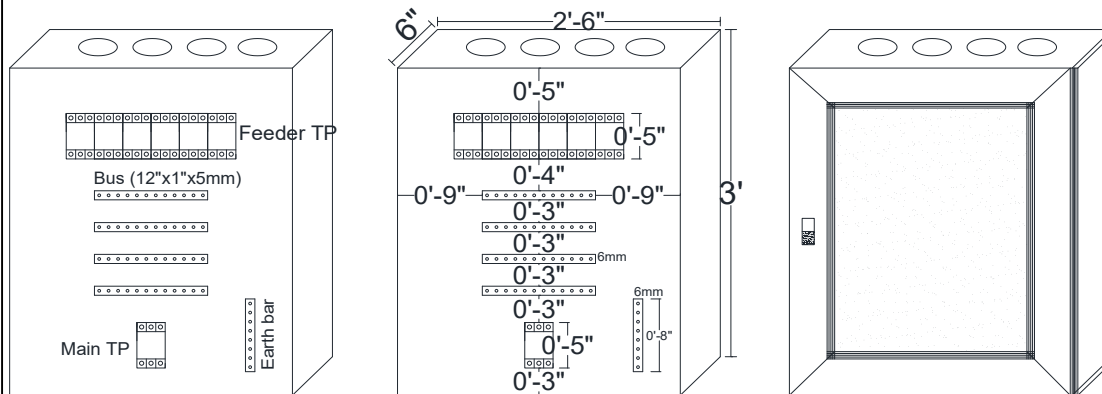


Fig : 4.3

EARTHING ARRANGEMENT

To different equipment
(HDBC, 2 SGW)

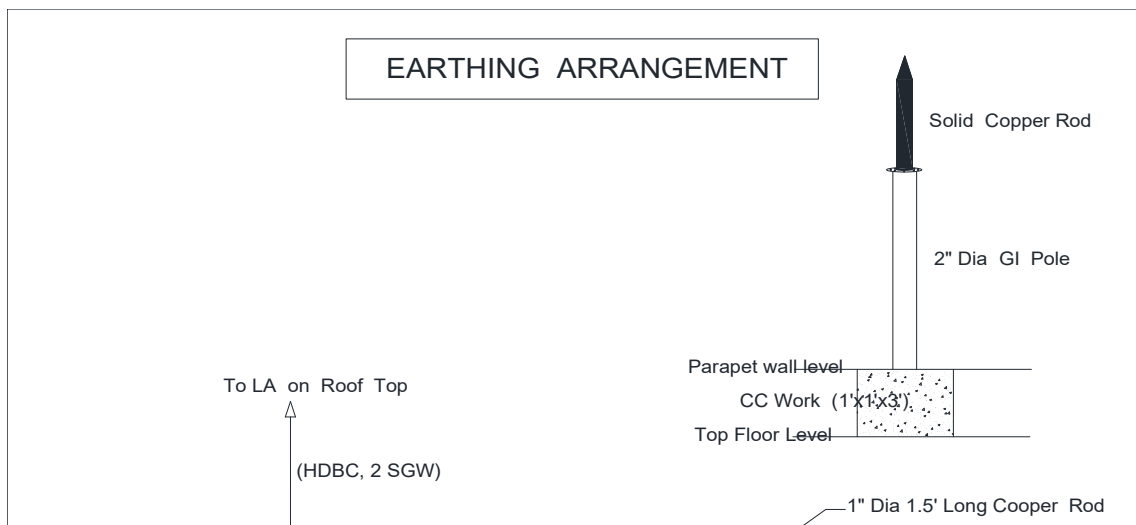
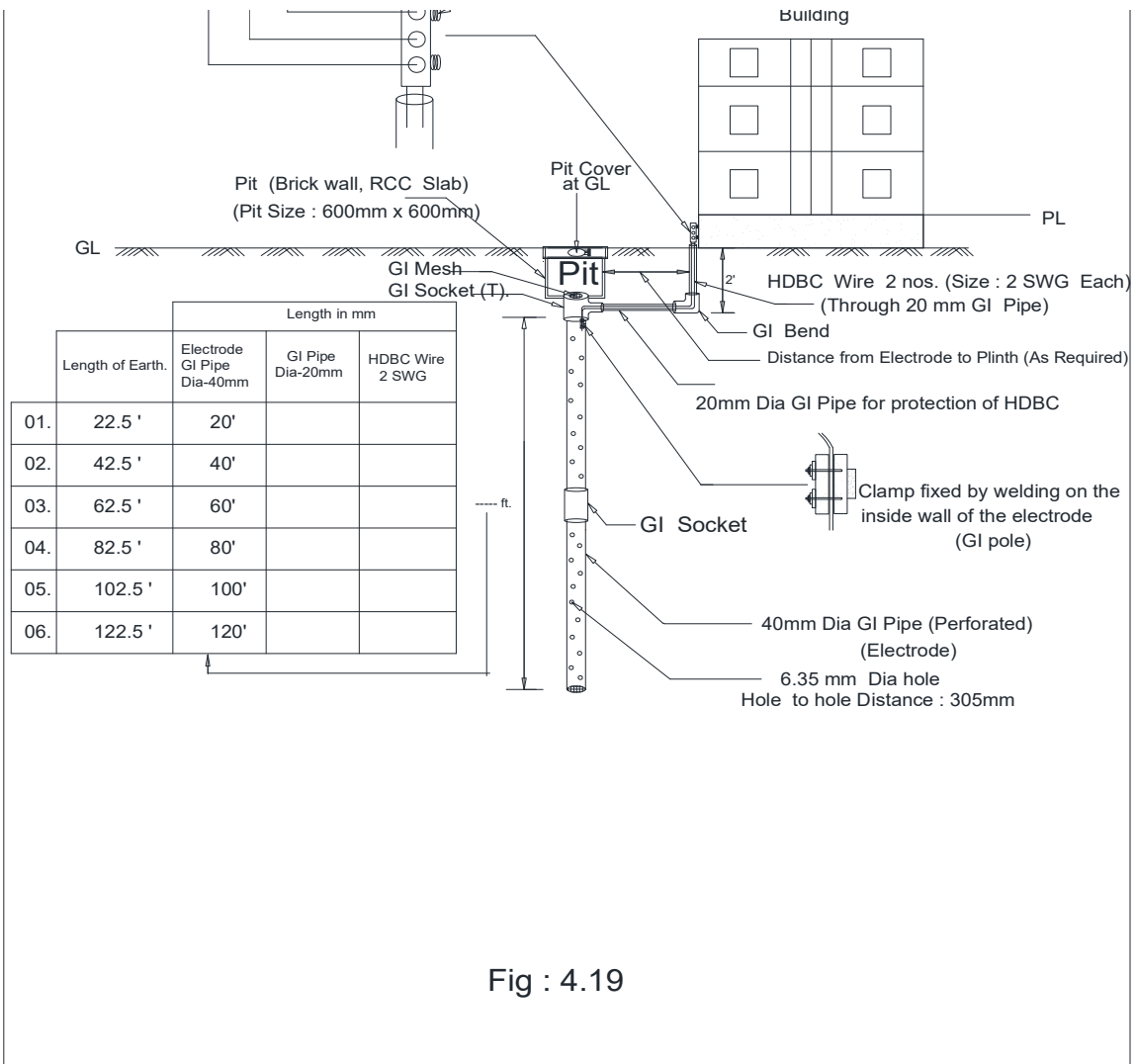
Copper Bar on Plinth wall
Insulator

Builder

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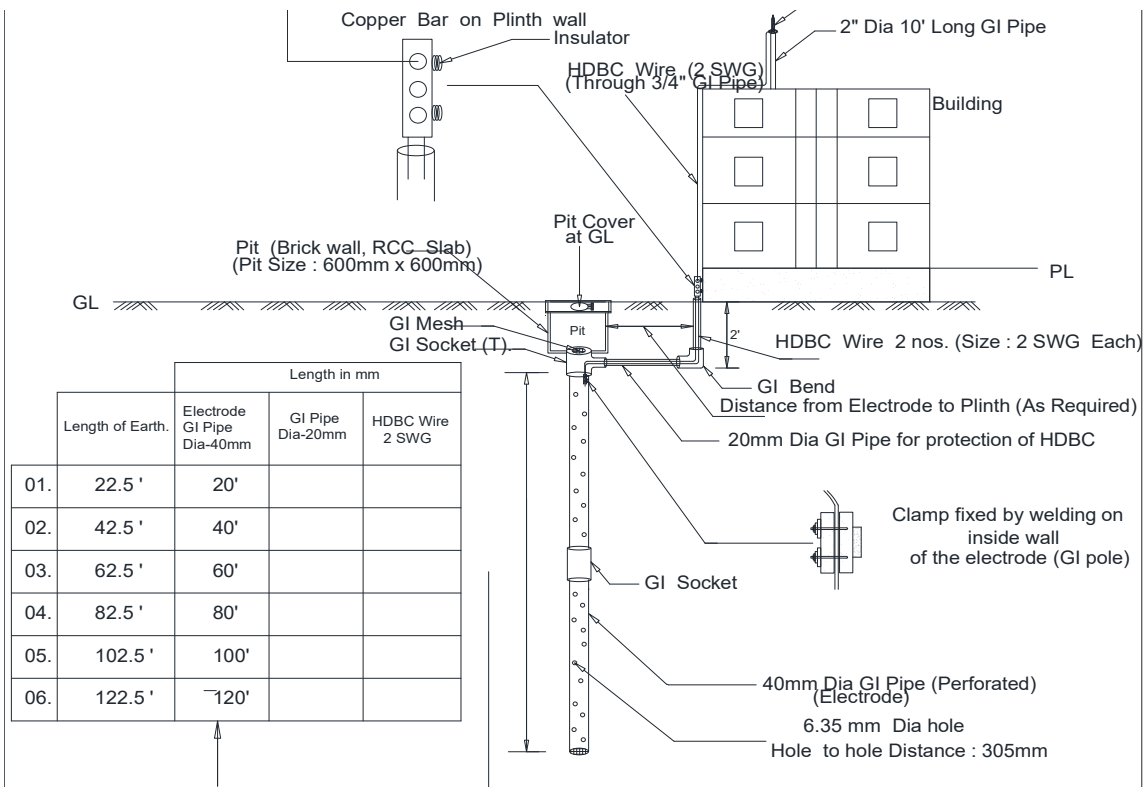
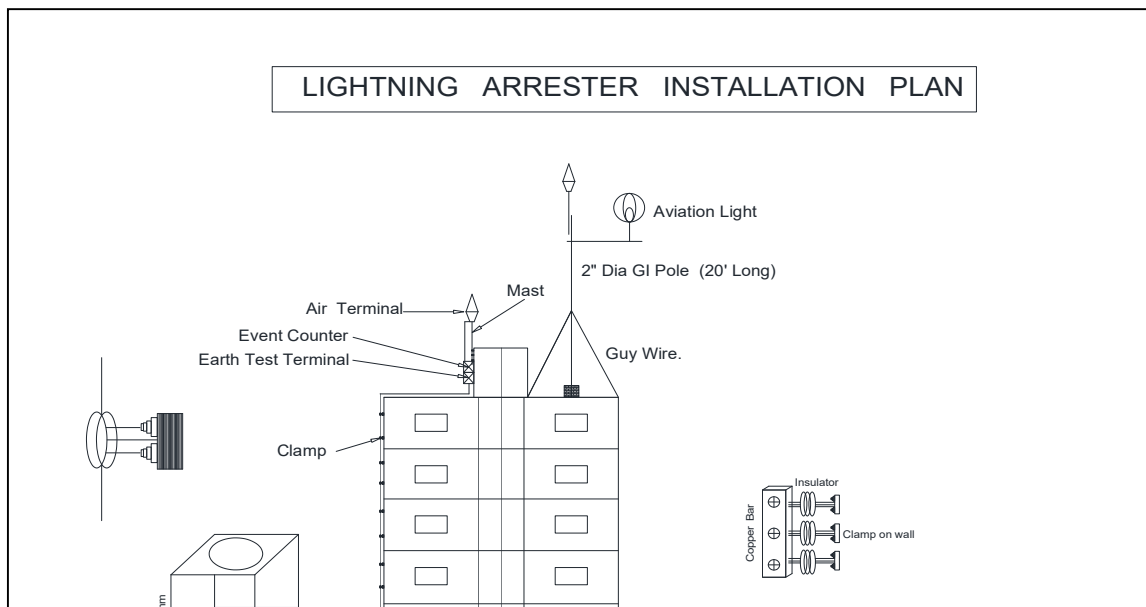
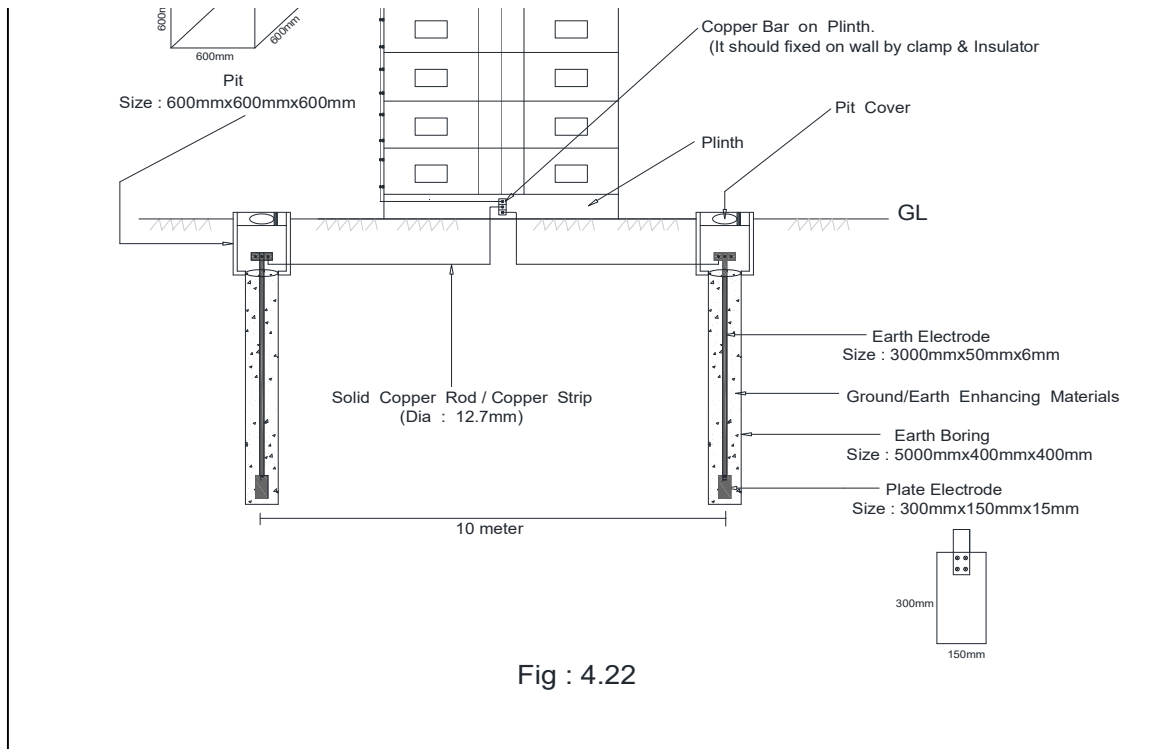


Fig : 4.21





Subhead-5

Pump Motors & Related Works

Item No.	Description of Item	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)

5.1 CENTRIFUGAL PUMP MOTOR SET**SINGLE STAGE (SINGLE PHASE)****(For lower capacity/smaller household requirement)**

Providing of single stage 2800-2900 RPM monoblock type Centrifugal water pump motor set (reservoir to overhead tank) manufactured according to relevant BDS standard and ISO 9906:2012, GRADE 3B/ DIN/ NEMA/ IEC/ BS/ VDE/ JIS/CEI 2-3/ CSA/ GS/ SONCAP/ ROHS & ISO 9001 (Quality) ISO 14001 (Environment and Safety) standard of following capacity suitable for operation at single phase, 230 V $\pm$ 5 %, 50 Hz AC having insulation: B & protection: IPX4 (minimum) & CE certified . Country of Manufacture: Bangladesh/ China/ Vietnam/ Malaysia as per sample accepted / approved by the Engineer-in-charge.

	HP	Discharge (liter/min)	Head (meter)	Suction dia (mm)	Delivery dia (mm)					
5.1.1	0.5	10-80	22-14	25	25	Set	6,602.00	6,602.00	6,602.00	6,602.00
5.1.2	1	10-100	30-12	25	25	Set	8,323.00	8,323.00	8,323.00	8,323.00
5.1.3	1	10-100	35-16	25	25	Set	13,305.00	13,305.00	13,305.00	13,305.00
5.1.4	1.5	30-120	38-22	32	25	Set	14,736.00	14,736.00	14,736.00	14,736.00
5.1.5	1.5	10-120	38-15	40	25	Set	14,250.00	14,250.00	14,250.00	14,250.00
5.1.6	1.5	10-120	39-20	32	25	Set	18,412.00	18,412.00	18,412.00	18,412.00
5.1.7	2	50-220	36-23	40	25	Set	21,186.00	21,186.00	21,186.00	21,186.00
5.1.8	2	10-200	37-19	38	25	Set	22,448.00	22,448.00	22,448.00	22,448.00
5.1.9	3	50-450	32-21	50	50	Set	30,853.00	30,853.00	30,853.00	30,853.00
5.1.10	3	100-500	26-5	50	50	Set	24,339.00	24,339.00	24,339.00	24,339.00
5.1.11	4	100-216	29-13	50	50	Set	36,950.00	36,950.00	36,950.00	36,950.00

5.2 SINGLE STAGE (SINGLE PHASE)

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Item No.	Description of Item					Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Providing of single stage 2800-2900 RPM monoblock type Centrifugal water pump motor set (reservoir to overhead tank) manufactured according to relevant BDS standard and ISO 9906:2012, GRADE 3B / DIN / NEMA / IEC / BS / VDE / JIS & ISO 9001:2015 standard. CE certified / UL listed of following capacity suitable for operation at single phase, 230 V $\pm$ 5 %, 50 Hz AC having insulation: Class F & Protection: IPX4 (minimum) manufactured by company having minimum 30 years of manufacturing experience in their own industry .Country of Manufacture: EU Countries/ USA/ Japan/UK, as per sample accepted / approved by the Engineer-in-									
	HP	Discharge (liter/min)	Head (meter)	Suction dia (mm)	Delivery dia (mm)					
5.2.1	0.5	10-80	22-14	25	25	Set	21,313.00	21,313.00	21,313.00	21,313.00
5.2.2	1	10-90	34-25	25	25	Set	27,366.00	27,366.00	27,366.00	27,366.00
5.2.3	1	20-100	32-20	25	25	Set	19,295.00	19,295.00	19,295.00	19,295.00
5.2.4	1.5	20-120	42-21	25	25	Set	32,410.00	32,410.00	32,410.00	32,410.00
5.2.5	1.5	100-450	24-8	50	50	Set	28,753.00	28,753.00	28,753.00	28,753.00
5.2.6	1.5	30-120	38-22	32	25	Set	45,021.00	45,021.00	45,021.00	45,021.00
5.2.7	2	20-120	50-32	25	25	Set	41,364.00	41,364.00	41,364.00	41,364.00
5.2.8	2	100-500	28-8	50	50	Set	32,536.00	32,536.00	32,536.00	32,536.00
5.2.9	2	50-220	37-23	40	25	Set	54,353.00	54,353.00	54,353.00	54,353.00

5.3 SINGLE STAGE (THREE PHASE)

Providing of single stage 2800-2900 RPM centrifugal water pump motor set monoblock type (reservoir to overhead tank) manufactured according to relevant BDS standard and ISO 9906:2012, GRADE 3B / DIN / NEMA / IEC / BS / VDE / JIS & ISO 9001:2015 standard. CE certified / UL listed of following capacity suitable for operation at 3- phase, 400 V $\pm$ 5 % 50 Hz AC having Insulation: Class F & Protection: IPX5 (minimum) manufactured by company having minimum 30 years of manufacturing experience in their own industry. Country of Manufacture: EU Countries/ USA/ Japan/UK, as per sample accepted / approved by the Engineer-in-charge.

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Item No.	Description of Item					Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	HP	Discharge (liter/min)	Head (meter)	Suction dia (mm)	Delivery dia (mm)					
5.3.1	3	17-233	62-8	40	40	Set	79,828.00	79,828.00	79,828.00	79,828.00
5.3.2	3	100-500	32-14	50	50	Set	50,822.00	50,822.00	50,822.00	50,822.00
5.3.3	4	100-450	37-24	50	38	Set	108,833.00	108,833.00	108,833.00	108,833.00
5.3.4	4	67-333	55-49	50	32	Set	88,025.00	88,025.00	88,025.00	88,025.00
5.3.5	5.5	100-700	38-20	65	40	Set	120,939.00	120,939.00	120,939.00	120,939.00
5.3.6	5.5	100-417	45-27	50	32	Set	98,492.00	98,492.00	98,492.00	98,492.00
5.3.7	7.5	100-900	46-15	50	50	Set	134,559.00	134,559.00	134,559.00	134,559.00
5.3.8	7.5	200-667	49-31	65	40	Set	111,607.00	111,607.00	111,607.00	111,607.00
5.3.9	10	100-900	61-26	50	50	Set	216,531.00	216,531.00	216,531.00	216,531.00
5.3.10	10	417-1250	40-25	65	50	Set	124,218.00	124,218.00	124,218.00	124,218.00
5.3.11	15	600-2400	37-23	80	65	Set	297,745.00	297,745.00	297,745.00	297,745.00
5.3.12	15	500-1833	38-28	80	65	Set	227,880.00	227,880.00	227,880.00	227,880.00
5.3.13	15	150-700	71-55	65	40	Set	164,826.00	164,826.00	164,826.00	164,826.00
5.3.14	20	100-7000	88-72	65	38	Set	318,049.00	318,049.00	318,049.00	318,049.00
5.3.15	20	200-667	88-71	65	40	Set	272,019.00	272,019.00	272,019.00	272,019.00
5.3.16	20	1167-3250	31-17	100	80	Set	253,102.00	253,102.00	253,102.00	253,102.00
5.3.17	20	450-1300	71-51	65	50	Set	175,545.00	175,545.00	175,545.00	175,545.00
5.3.18	25	667-2667	46-21	80	65	Set	272,019.00	272,019.00	272,019.00	272,019.00
5.3.19	25	450-1300	78-58	65	50	Set	186,895.00	186,895.00	186,895.00	186,895.00
5.3.20	30	200-2600	57-42	80	65	Set	433,061.00	433,061.00	433,061.00	433,061.00
5.3.21	30	417-1250	88-68	65	50	Set	296,358.00	296,358.00	296,358.00	296,358.00
5.3.22	30	1167-3750	40-23	100	80	Set	288,792.00	288,792.00	288,792.00	288,792.00
5.3.23	40	833-4650	51-28	125	100	Set	702,936.00	702,936.00	702,936.00	702,936.00
5.3.24	40	417-1667	100-44	65	50	Set	438,862.00	438,862.00	438,862.00	438,862.00
5.3.25	40	1400-3750	50-38	100	80	Set	404,813.00	404,813.00	404,813.00	404,813.00
5.3.26	50	500-3900	62-40	80	65	Set	918,836.00	918,836.00	918,836.00	918,836.00
5.3.27	50	400-2500	87-62	80	65	Set	939,140.00	939,140.00	939,140.00	939,140.00
5.3.28	60	400-2600	95-68	80	65	Set	952,634.00	952,634.00	952,634.00	952,634.00
5.3.29	60	600-3600	77-54	100	80	Set	944,563.00	944,563.00	944,563.00	944,563.00
5.3.30	75	800-5150	75-48	127	100	Set	1,209,015.00	1,209,015.00	1,209,015.00	1,209,015.00
5.3.31	75	600-3900	88-60	80	65	Set	1,026,786.00	1,026,786.00	1,026,786.00	1,026,786.00
5.3.32	100	800-5750	89-59	127	100	Set	1,404,612.00	1,404,612.00	1,404,612.00	1,404,612.00
5.3.33	100	1333-4250	102-92	100	80	Set	1,483,052.00	1,483,052.00	1,483,052.00	1,483,052.00

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Item No.	Description of Item	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)

5.4 MULTI-STAGE (THREE PHASE)

Providing of following capacity 2800-2900 RPM multi-stage Centrifugal water pump-motor set manufactured according to relevant BDS standard and ISO 9906:2012, GRADE 3B DIN / NEMA / IEC / BS / VDE / JIS & ISO 9001:2015 standard. CE certified / UL listed complete with gaskets, bolts, nuts & standard, accessories etc. or closed coupled as required coupled with 1-phase / 3-phase, 230/400 V $\pm$ 5%, 50 Hz AC having Insulation: Class F & Protection : IP44 (minimum), 2900 RPM horizontal motor having six terminals for star-delta or DOL starting & totally enclosed fan cooled & in built thermal protection etc. suitable for multi-storied high rise building manufactured by company having minimum 30 years of manufacturing experience in their own factory. Country of Manufacture: EU Countries/ USA/ Japan/UK, as per sample accepted / approved by the

	HP	Discharge (liter/min)	Head (meter)	Suction dia (mm)	Delivery dia (mm)					
5.4.1	1.5	17-200	42-15	38.1	30	Set	47,922.00	47,922.00	47,922.00	47,922.00
5.4.2	1.8	30-140	64-18	25	25	Set	57,380.00	57,380.00	57,380.00	57,380.00
5.4.3	2	60-240	43-13	40	32	Set	82,602.00	82,602.00	82,602.00	82,602.00
5.4.4	2	17-233	49-17	38.1	30	Set	51,074.00	51,074.00	51,074.00	51,074.00
5.4.5	3	20-160	67-32	40	25	Set	76,296.00	76,296.00	76,296.00	76,296.00
5.4.6	3	50-150	59-37	30	25	Set	66,208.00	66,208.00	66,208.00	66,208.00
5.4.7	3	30-140	106-30	32	32	Set	101,518.00	101,518.00	101,518.00	101,518.00
5.4.8	5.5	100-350	67-35	50	38	Set	137,460.00	137,460.00	137,460.00	137,460.00

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Item No.	Description of Item					Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
5.4.9	5.5	67-267	79-44	38.1	30	Set	119,174.00	119,174.00	119,174.00	119,174.00
5.4.10	5.5	100-400	66-30	50	50	Set	139,351.00	139,351.00	139,351.00	139,351.00
5.4.11	7.5	100-400	73-46	50	38	Set	142,378.00	142,378.00	142,378.00	142,378.00
5.4.12	7.5	67-267	86-56	38.1	30	Set	122,957.00	122,957.00	122,957.00	122,957.00
5.4.13	10	100-400	85-60	50	38	Set	164,573.00	164,573.00	164,573.00	164,573.00
5.4.14	10	83-300	93-58	38.1	30	Set	133,046.00	133,046.00	133,046.00	133,046.00
5.4.15	10	100-400	125-56	50	50	Set	296,989.00	296,989.00	296,989.00	296,989.00
5.4.16	15	100-450	102-69	50	38	Set	297,493.00	297,493.00	297,493.00	297,493.00
5.4.17	15	667-167	147-51	65	65	Set	177,184.00	177,184.00	177,184.00	177,184.00

5.5 SELF PRIMING JET PUMP MOTOR SET

Providing of single/multistage self priming Jet pump motor set 2800-2900 RPM monoblock type manufactured according to relevant BDS standard and DIN / NEMA / IEC / VDE / BS / JIS & ISO 9001:2015 standard. CE certified / UL listed of following capacity and suitable for operation at single phase, 230 V $\pm$ 5 %, 50 Hz AC having insulation Class F and Protection IP44 (minimum), manufactured by company having at least 30 years of manufacturing experience in their own industry as per sample accepted / approved by the Engineer-in-charge.

	HP	Discharge (liter/min)	Dynamic Head (meter)	Suction Dia (mm)	Delivery Dia (mm)					
5.5.1	1	10-50	52-25	25	25	Set	17,025.00	17,025.00	17,025.00	17,025.00
5.5.2	1	10-70	44-20	25	25	Set	17,655.00	17,655.00	17,655.00	17,655.00
5.5.3	1.5	5-80	52-30	25	25	Set	35,059.00	35,059.00	35,059.00	35,059.00
5.5.4	1.5	10-117	45-16	38	30	Set	43,382.00	43,382.00	43,382.00	43,382.00
5.5.5	1.5	10-160	39-17	38	30	Set	47,922.00	47,922.00	47,922.00	47,922.00
5.5.6	1.5	20-120	48-32	38	32	Set	35,311.00	35,311.00	35,311.00	35,311.00

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Item No.	Description of Item					Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
5.5.7	2	10-120	58-30	32	25	Set	58,011.00	58,011.00	58,011.00	58,011.00
5.5.8	2	10-177	66-26	40	32	Set	68,730.00	68,730.00	68,730.00	68,730.00

5.6 SUBMERSIBLE PUMP MOTOR SET
(from underground reservoir to overhead tank)
(for above 16 storied building)

Providing of following capacity multistage horizontal stainless steel Submersible Water Pump Motor set manufactured according to relevant BDS standard and ISO 9906:2012, Grade 3B / DIN / NEMA / IEC / BS / VDE / JIS & ISO 9001:2015 standard. CE certified / UL listed comprising of 2900 RPM, single / three phase Submersible motor having Insulation : Class F & Protection: IP68 (minimum), suitable for operation at 400 V $\pm$ 5% , 50 Hz AC supply, non-return valve with 10 meters long required marine cable in a single length etc. complete in all respect manufactured by company having minimum 30 years of manufacturing experience in their own industry. Country of Manufacture: EU Countries/ USA/ Japan/UK, as per sample accepted / approved by the Engineer-in-charge.

	HP	Discharge (liter/min)	Head (meter)	Delivery dia (mm)	Column pipe dia (mm)					
5.6.1	15	100-800	123-37	80	80	Set	877,725.00	877,725.00	877,725.00	877,725.00
5.6.2	20	200-1001	128-48	80	80	Set	945,193.00	945,193.00	945,193.00	945,193.00
5.6.3	20	100-800	167-51	80	80	Set	999,168.00	999,168.00	999,168.00	999,168.00
5.6.4	20	400-1667	82-30	127	125	Set	508,853.00	508,853.00	508,853.00	508,853.00

5.7 SUBMERSIBLE PUMP MOTOR SET
(for deep tube well)

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Item No.	Description of Item					Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Providing of following capacity multistage Bore-well Submersible water Pump Motor set manufactured according to relevant BDS standard and ISO 9906:2012, Grade 3B / DIN / NEMA / IEC / BS / VDE / JIS & ISO 9001:2015 standard. CE certified / UL listed comprising of 2900 RPM, single/ three phase submersible rewindable type (oil / water cooled) motor having insulation : Class F & Protection : IP68 (minimum), suitable for operation at 230 /400 V $\pm$ 5% , 50 Hz AC supply, non-return valve with 10 meters long marine cable (total required length of marine cable including this 10 meters shall be in a single length) etc. complete in all respect manufactured by company having minimum 30 years of manufacturing experience. Country of Manufacture: EU Countries/ USA/ Japan/UK, in their own industry as per sample accepted / approved by the Engineer-in-									
	HP	Discharge (liter / min)	Head (meter)	Tube-well dia (mm)	Column pipe dia (mm)					
5.7.1	0.75	13-53	69-30	100	31.25	Set	63,685.00	63,685.00	63,685.00	63,685.00
5.7.2	1	25-100	58-18	100	31.25	Set	60,533.00	60,533.00	60,533.00	60,533.00
5.7.3	1	13-53	81-35	100	31.25	Set	72,513.00	72,513.00	72,513.00	72,513.00
5.7.4	1.5	33-133	68-19	100	50.00	Set	69,991.00	69,991.00	69,991.00	69,991.00
5.7.5	1.5	10-58	104-30	100	31.25	Set	76,927.00	76,927.00	76,927.00	76,927.00
5.7.6	2	40-200	58-21	150	31.25	Set	155,872.00	155,872.00	155,872.00	155,872.00
5.7.7	2	50-300	37-14	150	50	Set	165,330.00	165,330.00	165,330.00	165,330.00
5.7.8	3	25-150	107-45	150	50	Set	223,341.00	223,341.00	223,341.00	223,341.00
5.7.9	3	20-100	162-63	150	31.25	Set	219,305.00	219,305.00	219,305.00	219,305.00
5.7.10	3	50-300	55-22	150	50	Set	210,982.00	210,982.00	210,982.00	210,982.00
5.7.11	4	50-375	60-15	150	50	Set	232,799.00	232,799.00	232,799.00	232,799.00
5.7.12	5.5	40-200	150-53	150	50	Set	243,518.00	243,518.00	243,518.00	243,518.00
5.7.13	5.5	50-300	97-38	150	50	Set	226,619.00	226,619.00	226,619.00	226,619.00
5.7.14	5.5	50-375	77-19	150	50	Set	236,834.00	236,834.00	236,834.00	236,834.00
5.7.15	5.5	233-567	40-15	200	65	Set	265,461.00	265,461.00	265,461.00	265,461.00
5.7.16	7.5	40-200	200-72	200	50	Set	296,358.00	296,358.00	296,358.00	296,358.00
5.7.17	7.5	50-300	135-53	200	50	Set	290,809.00	290,809.00	290,809.00	290,809.00

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Item No.	Description of Item					Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
5.7.18	7.5	50-450	81-32	200	80	Set	351,468.00	351,468.00	351,468.00	351,468.00
5.7.19	7.5	67-300	101-23	200	80	Set	341,127.00	341,127.00	341,127.00	341,127.00
5.7.20	7.5	133-433	109-28	200	65	Set	278,072.00	278,072.00	278,072.00	278,072.00
5.7.21	7.5	333-1067	48-17	200	80	Set	269,875.00	269,875.00	269,875.00	269,875.00
5.7.22	10	50-450	121-48	200	80	Set	472,912.00	472,912.00	472,912.00	472,912.00
5.7.23	10	100-600	92-31	200	80	Set	466,228.00	466,228.00	466,228.00	466,228.00
5.7.24	10	200-1000	54-22	200	80	Set	499,899.00	499,899.00	499,899.00	499,899.00
5.7.25	10	100-800	89-27	200	80	Set	445,924.00	445,924.00	445,924.00	445,924.00
5.7.26	15	200-1000	87-35	200	80	Set	606,588.00	606,588.00	606,588.00	606,588.00
5.7.27	20	400-1600	68-38	300	100	Set	607,849.00	607,849.00	607,849.00	607,849.00
5.7.28	20	400-1667	82-30	300	125	Set	508,853.00	508,853.00	508,853.00	508,853.00
5.7.29	20	400-1200	102-46	200	80	Set	473,542.00	473,542.00	473,542.00	473,542.00
5.7.30	25	400-1667	96-39	300	125	Set	546,686.00	546,686.00	546,686.00	546,686.00
5.7.31	25	200-1000	140-46	300	80	Set	555,514.00	555,514.00	555,514.00	555,514.00
5.7.32	30	400-1667	120-49	300	125	Set	619,830.00	619,830.00	619,830.00	619,830.00
5.7.33	40	800-2000	138-60	300	127	Set	783,268.00	783,268.00	783,268.00	783,268.00
5.7.34	40	400-1667	173-68	300	125	Set	777,215.00	777,215.00	777,215.00	777,215.00
5.7.35	50	800-2000	160-72	300	150	Set	972,181.00	972,181.00	972,181.00	972,181.00
5.7.36	50	833-2667	115-60	300	125	Set	959,065.00	959,065.00	959,065.00	959,065.00
5.7.37	50	800-2250	123-60	300	125	Set	1,009,509.00	1,009,509.00	1,009,509.00	1,009,509.00
5.7.38	60	800-2000	180-90	300	127	Set	1,161,093.00	1,161,093.00	1,161,093.00	1,161,093.00
5.7.39	60	800-2416	146-55	300	125	Set	1,110,397.00	1,110,397.00	1,110,397.00	1,110,397.00
5.7.40	60	833-2667	138-72	300	125	Set	1,085,175.00	1,085,175.00	1,085,175.00	1,085,175.00
5.7.41	75	800-2000	184-94	300	150	Set	1,282,537.00	1,282,537.00	1,282,537.00	1,282,537.00
5.7.42	80	1800-3800	128-36	300	125	Set	1,299,562.00	1,299,562.00	1,299,562.00	1,299,562.00
5.7.43	90	800-2000	230-120	300	150	Set	1,417,475.00	1,417,475.00	1,417,475.00	1,417,475.00

5.8 SUBMERSIBLE SEWAGE PUMP MOTOR SET
(for community water supply)

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Item No.	Description of Item	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)

Providing of single stage Submersible sewage pump motor for pumping all kind of dirty liquid, like sewage, continue fiber and solid metal, waste water including dewatering liquid & areas liable to flooding with dirty water & can be operate on single phase 230 V $\pm$ 5% 50 Hz AC supply with built in thermal over load protection, or three phase 400 V $\pm$ 5% 50 Hz AC supply direct on line starter having Insulation : Class F & Protection : IP68 (minimum), with 10 meters long required marine cable in a single length made in accordance with relevant BDS standard and ISO 9906:2012, GRADE 3B/ DIN / NEMA / IEC / BS / VDE / JIS & ISO 9001:2015 standard. CE certified / UL listed, manufactured by Company having minimum 30 years of manufacturing experience. Country of Manufacture: EU Countries/ USA/ Japan/UK, in their own industry as per sample accepted / approved by the Engineer-in-charge.

	HP	Discharge (liter/min)	Head (meter)				
5.8.1	1	80-550	11-1	Set	61,415.00	61,415.00	61,415.00
5.8.2	1	25-325	14.5-2	Set	48,552.00	48,552.00	48,552.00
5.8.3	1	60-380	12-1	Set	53,597.00	53,597.00	53,597.00
5.8.4	1.5	50-400	18-2	Set	132,920.00	132,920.00	132,920.00
5.8.5	1.5	100-450	17-2	Set	95,087.00	95,087.00	95,087.00
5.8.6	2	80-980	12-2	Set	162,556.00	162,556.00	162,556.00
5.8.7	2	83-650	18-4.5	Set	90,799.00	90,799.00	90,799.00
5.8.8	3	80-1175	18-2	Set	141,874.00	141,874.00	141,874.00
5.8.9	3	80-580	28-2	Set	122,074.00	122,074.00	122,074.00
5.8.10	3	80-1130	18-2	Set	120,435.00	120,435.00	120,435.00

5.9 **SUBMERSIBLE PUMP MOTOR SET**
(for fountain & reservoir)

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Item No.	Description of Item	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)

Providing of single stage submersible sump pump motor set , single entry closed coupled unit with marine cable & standard accessories for fountain & reservoir & can be operate on single phase 230 V $\pm$ 5% 50 Hz AC supply with built in thermal over load protection, or three phase 400 V $\pm$ 5% 50 Hz AC supply direct on line starter having Insulation : Class F & Protection : IP68 (minimum), with 10 meters long required marine cable in a single length made in accordance with relevant BDS standard and ISO 9906:2012, GRADE 3B/ DIN / NEMA / IEC / BS / VDE / JIS & ISO 9001:2015 standard. CE certified / UL listed, manufactured by Company having minimum 30 years of manufacturing experience in their own industry. Country of Manufacture: EU Countries/ USA/ Japan/UK, as per sample accepted / approved by the Engineer-in-charge.

HP	Discharge (liter/min)	Head (meter)
1 HP	25-325	14.5-2
2 HP	50-300	21-13
3 HP	80-580	28-2
5 HP	200-1200	17.5-4

5.9.1	1 HP	25-325	14.5-2	Set	54,353.00	54,353.00	54,353.00	54,353.00
5.9.2	2 HP	50-300	21-13	Set	82,350.00	82,350.00	82,350.00	82,350.00
5.9.3	3 HP	80-580	28-2	Set	94,961.00	94,961.00	94,961.00	94,961.00
5.9.4	5 HP	200-1200	17.5-4	Set	227,376.00	227,376.00	227,376.00	227,376.00

5.10 INSTALLATION OF WATER PUMP MOTOR SET

Installation, testing and commissioning of the following capacity centrifugal water pump-motor set on 304.8 mm (1') high (152.4 mm below and 152.4 mm above floor level) CC (1:2:4) base of required size with 12.7 mm ($\frac{1}{2}$ ") thick (1:4) cement plastering and neat cement finishing over the exposed CC surface, providing and fixing necessary bolts, nuts, vibration isolator with making all electrical and pipe connection as per direction of the Engineer-in-charge.

5.10.1	Up to 3 HP	Job	3,784.00	3714	3457	3457
5.10.2	From 4 to 7.5 HP	Job	10,719.00	10526	9797	9797
5.10.3	From 10 to 20 HP	Job	16,142.00	15852	14753	14753

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Item No.	Description of Item	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
5.10.4	From 25 to 40 HP	Job	25,222.00	24767	23052	23052
5.10.5	Above 40 HP	Job	31,527.00	30959	28815	28815
5.11	Installation, testing and commissioning of the following capacity deep well submersible pump-motor set by lowering down and connecting pump bowl assembly and column pipes with marine cable with the help of chain pulley after checking and testing the Pump Motor set including filling distilled water supplying and fixing a long bend, 6.35 mm thick M.S sheet tube-well cover required heavy duty holding clamp with nuts, bolts, and making all electrical and pipe connection complete as per direction of the Engineer-in-charge.					
5.11.1	Up to 7.5 HP	Job	18,916.00	18575	17290	17290
5.11.2	10 HP to 20 HP	Job	27,744.00	27244	25357	25357
5.11.3	25 HP to 40 HP	Job	37,833.00	37151	34579	34579
5.11.4	50 HP to 80 HP	Job	45,690.00	44867	41759	41759
5.11.5	90 HP to 100 HP	Job	56,749.00	55727	51869	51869
5.12	Installation, testing and commissioning of the following capacity horizontal submersible pump-motor set by lowering horizontally and connecting pump bowl assembly and column pipes with marine cable with the help of chain pulley after checking and testing the Pump Motor set including filling distilled water supplying and fixing a long bend, 6.35 mm thick M.S sheet tube-well cover required heavy duty holding clamp with nuts, bolts, and making all electrical and pipe connection complete as per direction of the Engineer-in-charge.					
5.12.1	10 HP	Job	44,138.00	43343	40341	40341
5.12.2	15 HP	Job	50,444.00	49535	46105	46105
5.12.3	20 HP	Job	63,055.00	61919	57631	57631

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Item No.	Description of Item	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
5.13	<u>AUTO CONTROLLER (For lifting pump, from Underground reservoir to Overhead reservoir)</u> Supply and installation of metal clad surface mounting type 3- phase 400 V $\pm$ 5% 50 Hz automatic motor control panel for the following capacity centrifugal pump motor set. This device will get sense to start pump when water in the overhead tank get down to a certain level and will stop when the water in the tank reach to a certain level. This process will be same for the underground reservoir. Main component manufactured in accordance with relevant BDS standard and ISO 9906:2012, GRADE 3B/ DIN / NEMA / IEC / BS / VDE / JIS & ISO 9001:2015 standard comprising of circuit breaker of required capacity, ammeter and voltmeter with selector switch of proper current ratio & burden, indicating light for 3-phase, on-trip indicating lamp, main & auxiliary contactors, thermal over load relay timer, on / off push button, electrical relay for protection against phase failure, phase reverse complete with necessary wires, cables, lugs, cable ties, connection etc. as per direction of the Engineer-in-charge.					
	With DOL Starter					
5.13.1	3-5 HP	Each	22,384.00	22,384.00	22,384.00	22,384.00
5.13.2	7.5 HP	Each	27,807.00	27,807.00	27,807.00	27,807.00
	With Star Delta Starter			-	-	-
5.13.3	10 HP	Each	29,825.00	29,825.00	29,825.00	29,825.00

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Item No.	Description of Item	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
5.13.4	12.5 HP – 15 HP	Each	33,860.00	33,860.00	33,860.00	33,860.00
5.13.5	20 HP	Each	41,679.00	41,679.00	41,679.00	41,679.00
5.13.6	25 HP	Each	45,463.00	45,463.00	45,463.00	45,463.00
5.13.7	30 HP	Each	53,029.00	53,029.00	53,029.00	53,029.00
5.13.8	40 HP	Each	63,118.00	63,118.00	63,118.00	63,118.00
5.13.9	50 HP	Each	75,729.00	75,729.00	75,729.00	75,729.00
5.13.10	60 HP	Each	94,645.00	94,645.00	94,645.00	94,645.00
5.13.11	75 HP	Each	113,562.00	113,562.00	113,562.00	113,562.00
5.13.12	85 HP	Each	126,173.00	126,173.00	126,173.00	126,173.00
5.13.13	100 HP	Each	138,784.00	138,784.00	138,784.00	138,784.00
5.14	<u>AUTOMATIC STAR-DELTA MOTOR CONTROL PANEL (For Submersible Pump, from deep tubewell to reservoir)</u>					
	Supply and installation of metal clad surface mounting type 3- phase 400 V $\pm 5\%$ 50 Hz automatic star-delta motor control panel for the following capacity submersible pump motor set. This device will get sense to start pump when water in the overhead tank get down to a certain level and will stop when the water in the tank reach to a certain level. Main component manufactured in accordance with relevant BDS standard and ISO 9906:2012, GRADE 3B/ DIN / NEMA / IEC / BS / VDE / JIS & ISO 9001:2015 standard comprising of circuit breaker of required capacity, ammeter and voltmeter with selector switch of proper current ratio & burden, indicating light for 3-phase, on-trip indicating lamp, main & auxiliary contactors, thermal over load relay timer, on / off push button, electrical relay for protection against phase failure, phase reverse complete with necessary wires, cables, lugs, cables ties, connection etc. as per direction of the Engineer in charge.					
5.14.1	3 - 5 HP	Each	26,546.00	26,546.00	26,546.00	26,546.00
5.14.2	7.5 HP	Each	30,960.00	30,960.00	30,960.00	30,960.00
5.14.3	10 HP	Each	35,374.00	35,374.00	35,374.00	35,374.00

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Item No.	Description of Item	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
5.14.4	12.5 HP–15 HP	Each	40,418.00	40,418.00	40,418.00	40,418.00
5.14.5	20 HP	Each	42,940.00	42,940.00	42,940.00	42,940.00
5.14.6	25 HP	Each	47,985.00	47,985.00	47,985.00	47,985.00
5.14.7	30 HP	Each	55,551.00	55,551.00	55,551.00	55,551.00
5.14.8	40 HP	Each	84,557.00	84,557.00	84,557.00	84,557.00
5.14.9	50 HP	Each	104,734.00	104,734.00	104,734.00	104,734.00
5.14.10	60 HP	Each	113,562.00	113,562.00	113,562.00	113,562.00
5.14.11	75 HP	Each	117,345.00	117,345.00	117,345.00	117,345.00
5.14.12	85 HP	Each	143,828.00	143,828.00	143,828.00	143,828.00
5.14.13	100 HP	Each	164,006.00	164,006.00	164,006.00	164,006.00
5.15	<u>BUTTERFLY VALVE & SLUICE VALVE</u>					
	Providing & fixing of the following butterfly valves / sluice valve with cast iron flat body, inside stem screw, non rising bronze spindle, taper seat, bronze spindle nuts, bush & gland nuts etc. with all other standard accessories manufactured according to relevant BDS standard and DIN / NEMA / IEC / BS / VDE / JIS & ISO 9001:2015 standard manufactured in EU/G7 countries as per sample accepted / approved by the Engineer-in-charge.					
5.15.1	Dia 25 mm (1")	Each	1,753.00	1749	1737	1737
5.15.2	Dia 32 mm (1.25")	Each	2,194.00	2190	2178	2178
5.15.3	Dia 40 mm (1.5")	Each	2,667.00	2664	2651	2651
5.15.4	Dia 50 mm (2")	Each	3,960.00	3956	3943	3943
5.15.5	Dia 65 mm (2.5")	Each	5,599.00	5595	5583	5583
5.15.6	Dia 75 mm (3")	Each	6,400.00	6397	6383	6383
5.15.7	Dia 100 mm (4")	Each	7,958.00	7954	7941	7941
5.15.8	Dia 150 mm (6")	Each	9,849.00	9846	9832	9832
5.15.9	Dia 200 mm (8")	Each	13,733.00	13729	13717	13717

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Item No.	Description of Item	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
5.16	<u>REFLEX VALVE (non-return valve)</u> Providing & fixing cast iron reflex valve (non-return valve) with cast iron body, reflex valve cover plate, flap, valve disc & flap lined with leather, cast iron hanging arm, stainless steel louver shaft & bolt with cover gasket etc. including all other standard accessories manufactured according to DIN / NEMA / IEC / BS / VDE / JIS & ISO 9001:2015 standard manufactured in EU/G7 countries as per sample accepted / approved by the Engineer-in-charge.					
5.16.1	Dia 25 mm (1")	Each	1,715.00	1712	1704	1704
5.16.2	Dia 32 mm (1.25")	Each	2,283.00	2281	2271	2271
5.16.3	Dia 40 mm (1.5")	Each	2,724.00	2721	2712	2712
5.16.4	Dia 50 mm (2")	Each	3,418.00	3415	3406	3406
5.16.5	Dia 75 mm (3")	Each	7,201.00	7198	7189	7189
5.16.6	Dia 100 mm (4")	Each	10,782.00	10780	10771	10771
5.16.7	Dia 150 mm (6")	Each	16,029.00	16025	16017	16017
5.17	<u>COLUMN PIPE</u> Providing of following dia 3.78 meter (10'-0) long column pipe to be connected with submersible Pump Motor set made of steel column pipe "Special" grade (minimum thickness 4 mm) with all standard accessories including special flange at both ends including anticorrosive painting etc. as per sample accepted / approved by the Engineer-in-charge.					
5.17.1	32 mm (1.25") dia	Each	2,378.00	2,378.00	2,378.00	2,378.00
5.17.2	50 mm (2") dia	Each	3,559.00	3,559.00	3,559.00	3,559.00
5.17.3	80 mm (3") dia	Each	5,705.00	5,705.00	5,705.00	5,705.00
5.17.4	100 mm (4") dia	Each	8,120.00	8,120.00	8,120.00	8,120.00
5.17.5	125 mm (5") dia	Each	9,916.00	9,916.00	9,916.00	9,916.00
5.17.6	150 mm (6") dia	Each	11,917.00	11,917.00	11,917.00	11,917.00
5.18	<u>MARINE CABLE</u>					

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Item No.	Description of Item	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Providing & fixing marine cable for submersible pump motor set manufactured according to DIN / NEMA / IEC / BS / VDE / JIS & ISO 9001:2015 standard & Cable manufacturer must have valid test certificate from internationally accredited laboratory (like CPRI, KEMA etc) accepted / approved by the Engineer-in-charge.					
5.18.1	3C - 0.75 sq. mm (for auto controller)	Meter	167.00	167.00	167.00	167.00
5.18.2	3C – 1.5 sq. mm	Meter	205.00	205.00	205.00	205.00
5.18.3	3C – 2.5 sq. mm	Meter	276.00	276.00	276.00	276.00
5.18.4	3C – 4 sq. mm	Meter	382.00	382.00	382.00	382.00
5.18.5	3C – 6 sq. mm	Meter	557.00	557.00	557.00	557.00
5.18.6	3C – 10 sq. mm	Meter	915.00	915.00	915.00	915.00
5.18.7	3C – 16 sq. mm	Meter	1,429.00	1,429.00	1,429.00	1,429.00
5.18.8	3C – 25 sq. mm	Meter	2,182.00	2,182.00	2,182.00	2,182.00
5.18.9	3C – 35 sq. mm	Meter	2,820.00	2,820.00	2,820.00	2,820.00
5.19	<u>MONTHLY OPERATION OF PUMP MOTOR SET</u>					
	Monthly operation of pump motor set with standby unit(s) by skilled operator round the clock including starter contacts, main switch control etc. as required and as per direction of the engineer-in-charge. (As per circular issued by Finance Division, Ministry of Finance, No-07.153.029.07.00.01.2019-259 Date: 10/06/2019)					
	(for a pump house having any nos. of pumps) (Rate to be determined based on zone and area)					
5.19.1	For Dhaka Metropolitan Areas	Per Month	23,469.00			
5.19.2	For Chattogram, Khulna, Rajshahi, Sylhet, Barishal, Rangpur, Narayanganj, and Gazipur City Corporation and Savar Municipality Areas	Per Month	22,221.00	22,221.00	22,221.00	22,221.00
5.19.3	Other Areas	Per Month	21,603.00	21,603.00	21,603.00	21,603.00
5.20	<u>PUMP REPAIRING</u>					

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Item No.	Description of Item	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Full-rewinding of single phase 230 V $\pm$ 5% 50 Hz AC electric induction motor (non submersible) including replacement of unserviceable wires by S & F of super enamel copper wire of required size with heating, varnishing & testing accepted / approved by the engineer. Dismantling and supplying of all materials, both way carrying, installation and commissioning.					
	<u>For 2900 RPM</u>					
5.20.1	0.75 HP motor	Each	1,576.00	1,576.00	1,576.00	1,576.00
5.20.2	1 HP motor	Each	1,955.00	1,955.00	1,955.00	1,955.00
5.20.3	2/3 HP motor	Each	3,216.00	3,216.00	3,216.00	3,216.00
	<u>For 1400 / 1500 RPM</u>					
5.20.4	0.75 HP motor	Each	1,702.00	1,702.00	1,702.00	1,702.00
5.20.5	1 HP motor	Each	2,081.00	2,081.00	2,081.00	2,081.00
5.20.6	2/3 HP motor	Each	3,342.00	3,342.00	3,342.00	3,342.00
5.21	<u>FULL-REWINDING ELECTRIC INDUCTION MOTOR</u>					
	Full-rewinding of 3-phase 400 V $\pm$ 5% 50 Hz AC electric induction motor (non submersible) including replacement of unserviceable wires by S & F of super enamel copper wire of required size with heating varnishing & testing accepted / approved by the engineer. Supplying of all materials, dismantling, both way carrying, installation and commissioning.					
	<u>For 2900 RPM</u>					
5.21.1	3 HP motor	Each	4,288.00	4,288.00	4,288.00	4,288.00
5.21.2	5 HP/5.5 HP motor	Each	7,062.00	7,062.00	7,062.00	7,062.00
5.21.3	7.5 HP motor	Each	9,710.00	9,710.00	9,710.00	9,710.00
5.21.4	10 HP motor	Each	13,494.00	13,494.00	13,494.00	13,494.00
5.21.5	15 HP motor	Each	18,664.00	18,664.00	18,664.00	18,664.00

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Item No.	Description of Item	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
5.21.6	20 HP motor	Each	23,078.00	23,078.00	23,078.00	23,078.00
5.21.7	25 HP motor	Each	28,122.00	28,122.00	28,122.00	28,122.00
5.21.8	30 HP motor	Each	35,752.00	35,752.00	35,752.00	35,752.00
5.21.9	40 HP motor	Each	44,580.00	44,580.00	44,580.00	44,580.00
5.21.10	60 HP motor	Each	54,669.00	54,669.00	54,669.00	54,669.00
5.21.11	75/80 HP motor	Each	63,496.00	63,496.00	63,496.00	63,496.00
5.21.12	90 HP motor	Each	73,585.00	73,585.00	73,585.00	73,585.00
5.21.13	100 HP motor	Each	82,413.00	82,413.00	82,413.00	82,413.00
For 1400 / 1500 RPM						
5.21.14	3 HP motor	Each	4,540.00	4,540.00	4,540.00	4,540.00
5.21.15	5 HP/5.5 HP motor	Each	7,693.00	7,693.00	7,693.00	7,693.00
5.21.16	7.5 HP motor	Each	11,602.00	11,602.00	11,602.00	11,602.00
5.21.17	10 HP motor	Each	14,124.00	14,124.00	14,124.00	14,124.00
5.21.18	15 HP motor	Each	18,034.00	18,034.00	18,034.00	18,034.00
5.21.19	20 HP motor	Each	23,078.00	23,078.00	23,078.00	23,078.00
5.21.20	25 HP motor	Each	28,122.00	28,122.00	28,122.00	28,122.00
5.21.21	30 HP motor	Each	33,230.00	33,230.00	33,230.00	33,230.00
5.21.22	40 HP motor	Each	44,580.00	44,580.00	44,580.00	44,580.00
5.21.23	60 HP motor	Each	57,191.00	57,191.00	57,191.00	57,191.00
5.21.24	75/80 HP motor	Each	62,866.00	62,866.00	62,866.00	62,866.00
5.21.25	90 HP motor	Each	73,585.00	73,585.00	73,585.00	73,585.00
5.21.26	100 HP motor	Each	82,413.00	82,413.00	82,413.00	82,413.00
5.22	<u>LABOUR CHARGE</u>					
	Labour charge for re-metalling, smoothing the bearing housing or fixing sleeves in the bearing housing of pump motor.					
5.22.1	1 HP to 7.5 HP	Job	725.00	706	662	662

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Item No.	Description of Item	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
5.22.2	10 HP to 60 HP	Job	883.00	866	820	820
5.22.3	70 HP to 100 HP	Job	1,513.00	1485	1383	1383
5.23	<u>LABOUR CHARGE FOR FIXING BEARING IN PUMP MOTOR</u>					
5.23.1	1 HP to 7.5 HP	Job	694.00	681	631	631
5.23.2	10 HP to 60 HP	Job	725.00	706	662	662
5.23.3	70 HP to 100 HP	Job	757.00	732	694	694
5.24	<u>FULL-REWINDING OF ELECTRIC SUBMERSIBLE MOTOR</u>					
	Full-rewinding of 1-phase/ 3-phase 230/400 V $\pm$ 5% 50 Hz AC electric submersible motor including replacement of unserviceable submersible wire of required size with water proof fiber / rope joint ferrule distilled water, glycerin, PIB / PVC & testing complete accepted / approved by the engineer in/c. supplying of all materials, dismantling, both way carrying installation and commissioning.	Job	5,927.00	5,927.00	5,927.00	5,927.00
5.25	<u>3 / 4 / 5 HP single/ three phase submersible pump</u>					
	Full-rewinding of 3 phase 400 V $\pm$ 5% 50 Hz AC submersible motor including replacement of unserviceable submersible wire of required size with water proof fiber / rope joint ferrule distilled water, Glycerin, PIB / PVC & testing complete accepted / approved by the engineer including supplying of all materials, dismantling, both way carrying installation and commissioning.					
5.25.1	5.5/7 / 10 submersible pump	Job	20,808.00	20,808.00	20,808.00	20,808.00
5.25.2	15 / 20 submersible pump	Job	34,050.00	34,050.00	34,050.00	34,050.00
5.25.3	25 / 30 submersible pump	Job	53,597.00	53,597.00	53,597.00	53,597.00
5.25.4	40 HP submersible pump	Job	79,449.00	79,449.00	79,449.00	79,449.00
5.25.5	50 HP submersible pump	Job	85,124.00	85,124.00	85,124.00	85,124.00
5.25.6	60 HP submersible pump	Job	93,321.00	93,321.00	93,321.00	93,321.00
5.25.7	75 / 85 HP submersible pump	Job	119,174.00	119,174.00	119,174.00	119,174.00

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Item No.	Description of Item	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
5.25.8	90/100 HP submersible pump	Job	128,001.00	128,001.00	128,001.00	128,001.00
5.26	<u>EXTACTION OF SUBMERSIBLE PUMP FROM BOREWELL</u>					
	Extraction, Pulling and decommissioning of the following capacity deep well submersible pump-motor set by connecting pump bowl assembly and Pull Out column pipes with marine cable with the help of chain pulley and Magnets after checking and testing the Pump Motor set disconnecting all nuts, bolts, and electrical connection as required as per direction of the Engineer-in-charge.					
5.26.1	Up to 5.5 HP submersible pump	Job	14,503.00	14343	13743	13743
5.26.2	7.5-15HP submersible pump	Job	18,286.00	18058	17201	17201
5.26.3	20 HP submersible pump	Job	20,808.00	20535	19506	19506
5.26.4	30 HP submersible pump	Job	24,591.00	24250	22965	22965
5.26.5	40 HP submersible pump	Job	28,375.00	27966	26422	26422
5.26.6	50 HP submersible pump	Job	30,897.00	30442	28727	28727
5.26.7	60 HP submersible pump	Job	33,419.00	32919	31032	31032
5.26.8	70 / 75 HP submersible pump	Job	37,202.00	36634	34491	34491
5.26.9	80 HP submersible pump	Job	43,508.00	42827	40253	40253
5.26.10	90 HP submersible pump	Job	46,030.00	45302	42558	42558
5.26.11	100 HP submersible pump	Job	48,552.00	47779	44863	44863
5.27	<u>BALL BEARING</u>					
	Manufactured in EU/G7 countries as per sample accepted / approved by the Engineer-in-charge.					
5.27.1	6201 ZZ ball bearing	Each	214.00	214.00	214.00	214.00
5.27.2	6202 ball bearing	Each	164.00	164.00	164.00	164.00

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Item No.	Description of Item	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
5.27.3	6203 ball bearing	Each	199.00	199.00	199.00	199.00
5.27.4	6204 ZZ ball bearing	Each	277.00	277.00	277.00	277.00
5.27.5	6205 ZZ ball bearing	Each	454.00	454.00	454.00	454.00
5.27.6	6206 ZZ ball bearing	Each	504.00	504.00	504.00	504.00
5.27.7	6302 ball bearing	Each	223.00	223.00	223.00	223.00
5.27.8	6303 ball bearing	Each	242.00	242.00	242.00	242.00
5.27.9	6304 ZZ ball bearing	Each	391.00	391.00	391.00	391.00
5.27.10	6305 ball bearing	Each	567.00	567.00	567.00	567.00
5.27.11	6306 ZZ ball bearing	Each	605.00	605.00	605.00	605.00
5.27.12	6307 ZZ ball bearing	Each	706.00	706.00	706.00	706.00
5.27.13	6308 ZZ ball bearing	Each	1,009.00	1,009.00	1,009.00	1,009.00
5.27.14	6309 ball bearing 22 (Kay / NTN)	Each	2,144.00	2,144.00	2,144.00	2,144.00
5.27.15	6313 ball bearing 22 (Kay / NTN)	Each	3,153.00	3,153.00	3,153.00	3,153.00
5.27.16	Thrust type bearing No. 7320	Each	7,567.00	7,567.00	7,567.00	7,567.00
5.27.17	6407 ball bearing	Each	2,144.00	2,144.00	2,144.00	2,144.00
5.28	<u>CAPACITOR FOR SINGLE PHASE MOTOR</u>					
	Manufactured in EU/G7 countries as per sample accepted / approved by the Engineer-in-charge.					
5.28.1	5 MFD (pin / wire)	Each	76.00	76.00	76.00	76.00
5.28.2	8 MFD (pin / wire)	Each	82.00	82.00	82.00	82.00
5.28.3	10 MFD (pin / wire)	Each	149.00	149.00	149.00	149.00
5.28.4	16 MFD (pin / wire)	Each	231.00	231.00	231.00	231.00
5.28.5	20 MFD (pin / wire)	Each	259.00	259.00	259.00	259.00
5.28.6	25 MFD (pin / wire)	Each	303.00	303.00	303.00	303.00
5.28.7	35 MFD (pin / wire)	Each	372.00	372.00	372.00	372.00
5.28.8	40 MFD (pin / wire)	Each	460.00	460.00	460.00	460.00

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Item No.	Description of Item	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
5.29	<u>AUTOMATIC PRESSURE AND FLOW CONTROLLER</u> Supply and Installation of Automatic Pressure and Flow Controller having Maximum flow rate-80 Liter/min (minimum), Starting Flow rate- 2-2.5 Liter/min, Maximum Switching current: 12 A. Maximum total pressure 10 Bar and operating pressure should be 1-3.5 Bar. Supported Motor voltage 230 V $\pm$ 5% 50 Hz AC supply. Having pressure gauge of minimum 40mm dia (0-12 Bar) and inlet and outlet size shall be 1 inch minimum and inline position threaded and protection: IP-65 (minimum). Manufactured in EU/G7 countries as per sample accepted / approved by the Engineer-in-charge.					
	(For Centrifugal Pump motor up to 2 HP)					
5.29.1	Maximum flow rate-80 Liter/min	Each	10,845.00	10,845.00	10,845.00	10,845.00
5.29.2	Maximum flow rate-200 Liter/min	Each	17,025.00	17,025.00	17,025.00	17,025.00

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Annexure-5**Guidelines for Water Requirements for Various Occupancies and Facility****Groups in Liters Per Capita Per Day (LPCD)**

Class of occupancy	Occupancy groups	For full a facilities (LPCD)	For restricted facilities (LPCD)
A: Residential	A4: Mess, Boarding Houses, Dormitories and Hostels	135	70
	A5: Hotels and Lodging Houses (per bed)	300	135
B: Educational Facilities	B1: Educational Facilities up to Higher Secondary Levels	70	45
	B2: Facilities for Training and above Higher Secondary	100	70
	B3: Pre-School Facilities	50	35
C: Institutional	C1: Institution for Care of Children	180	100
	C2: Custodian Institution for Physically Capable Adults	180	100
	C3: Custodian Institution for the Incapable Adults	120	70
	C4: Penal and Mental Institutions for Children	100	60
	C5: Penal and Mental Institutions for Adults	120	70
D: Healthcare Facilities	D1: Normal Medical Facilities (Small Hospitals)	340	225
	Big Hospitals (Over 100 beds)	450	250
	D2: Emergency Medical Facilities	300	135
	Nurses & Medical Quarters	250	135
E: Business	E1: Offices	45	30
	E2: Research and Testing Laboratories	70	45
	E3: Essential Services	70	45
F: Mercantile	F1: Small Shops and Market	45	30
	F2: Large Shops and Market	45	30
	F3: Refueling Station	70	45
G: Industrial Buildings	G1: Low Hazard Industries	40	25
	G2: Moderate Hazards Industries	40	25
H: Storage Buildings	H1: Low Fire Risk Storage	10	6
	H2: Moderate Fire Risk Storage	10	6
I: Assembly	I1: Large Assembly with Fixed Seats (per seat)	90	45
	I2: Small Assembly with Fixed Seats (per seat)	90	45
	I3: Large Assembly without Fixed Seats	15	10
	I4: Small Assembly without Fixed Seats	15	10
	I5: Sports Facilities	16	10
J: Hazardous Building	J1: Explosion Hazard Building	15	10
	J2: Chemical Hazard Building	15	10
	J3: Biological Hazard Building	10	6
	J4: Radiation Hazard Building	10	6
K: Garage ^c	K1: Parking Garage	15	10
	K2: Private Garage	15	10
	K3: Repair Garage	15	10
L: Utility	L: Utility	10	6
M: Miscellaneous	M1: Special Structures	-- ^d	-- ^d
	M2: Fences, Tanks and Towers	---	3

Note:

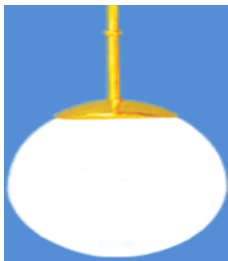
- For full facility in occupancy classifications A, B, C and D, the water requirement value includes 25% hot water
- In the case of mosques, the water requirements given above shall be adequate for ablution and other uses of one devotee per prayer. The appropriate LPCD value may be calculated on this basis
- Water requirement for occupancy K is shown as a provision for unknown visitors only
- Water requirement for occupancy M1 shall be assessed considering its nature of use and the similarity in purpose with any of the occupancies mentioned above.

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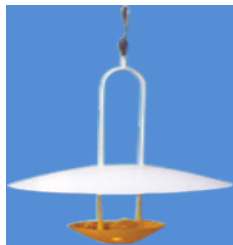
Subhead -6 Light Fittings

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
6.1	<u>PENDENT LIGHT FITTINGS</u>						
6.1.1	<u>PENDENT LIGHT FITTINGS (EXCEPT LAMP)</u> Providing & fixing of the fancy pendent light fitting with carrier, brass holder, earth terminal, necessary wiring with 2 x 0.4 sq.mm stranded PVC insulated flexible FR cable etc (except lamp) of the following manufacturer's model & catalogue number. The fittings shall be suitable for use of LED lamp and complete sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).						
6.1.1.1	Light source 15W LED Bulb, Material : Brass / SS Sheet carrier , Brass / SS Pipe(Dia-12mm, Long-600mm), Glass/PMMA Globe (Dia-200mm) and Brass/SS Sheet Ceiling base. Total : Dia-200mm, H-600mm GLORIA cat. no. GCF-1174(1)-655(8") Energy+ Cat No-EPHL-28055 Cosmo Cat No-BDTCL-HL-01, Asha Cat No-ACS-CP 211 G 2502 (8"), Crescent-CML-277(1) G8-NC-F or equivalent.		Each	1,223.00	1223	1221	1221

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
6.1.1.2	Light Source 15W LED Bulb, Material : Brass/SS Pipe (Dia-12mm), Brass /SS Sheet body, MS Sheet Base, MS Chain, Total : Dia-518mm, Height-600mm GLORIA cat. no.GCF-3115-2422 Energy+ Cat No-EPHL-28056 Cosmo Cat No-BDTCL-HL-02, Asha Cat No-ACS-CP 209, Crescent-CML-362 or equivalent		Each	1,980.00	1979	1977	1977
6.1.1.3	Material : Aluminium Sheet body, SS. Pipe (Dia-12mm), Brass Alloy, MS Sheet Base. Total : Dia-440mm, Height-550mm GLORIA cat. no. GHBL-1169 Energy+ Cat No-EPHL-28057 Cosmo Cat No-BDTCL-HL-03 Asha Cat No-ACS-CP 228, Crescent-CML- 527 or equivalent		Each	2,232.00	2232	2229	2229
6.1.1.4	Light source15W LED Bulb, Material: Alu. Sheet body, SS. Pipe (Dia-12mm), MS Sheet Base. Total : Dia-350mm, Height-750mm Gloria cat no- GHPL-1177 Energy+ EPHL-28037, Asha Cat No. ACS-CP 1342 or equivalent		Each	2,484.00	2484	2482	2482

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.1.1.5	Light source: 15W LED Bulb, Material: Alu. Sheet body, SS. Pipe (Dia-12mm), MS Sheet Base. Total : Dia-250mm, Height-750mm Gloria cat no- GHPL-1173 Energy+ EPHL-28040, Asha Cat No. ACS-CP 1341 Crescent-CML-450 or equivalent	Each	2,037.00	2037	2034	2034
						
6.1.1.6	Light source: 15W LED Bulb, Material: Alu. Sheet body, MS Sheet Base. Total : Dia-275mm, Height-750mm Gloria cat no- GHPL-1178 Energy+ EPHL-28060 Asha Cat No. ACS-CP 1344 Crescent-CMLI-C101881 1 (A) or equivalent					
						
6.1.1.7	Light source: 15W LED Bulb Material: Alu. Sheet body, SS Pipe (Dia-12mm), MS Sheet Base. Total : Dia-295mm, H-750mm Gloria cat no- GLHL-1185 Energy+-EPHL-28061 Asha Cat No. ACS-CP 1312 Crescent-CML-423 or equivalent	Each	2,043.00	2043	2040	2040
						
6.1.1.8	Light source: 9W LED Bulb Material: Alu. Sheet body, SS pipe (Dia-12mm), MS Sheet Base. Total: Dia-250mm, H-450mm Gloria cat no- GLHL-1160 Energy+-EPHL-28062 Asha Cat No. ACS-CP 210 Crescent-CML-194 or equivalent					
						

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.1.2	<u>PENDENT LED LIGHT FITTINGS</u>			0	0	0
	Supply & fixing of pendent LED light fittings of following Specifications: Luminous efficacy: i) For Spot/Bracket LED Light Fittings: 80 lm/W (min), ii) For Panel/Tube Light Fittings: 100 lm/W (min) Power Factor: minimum 0.95 Power Factor: minimum 0.95 Colour Rendering Index(Ra) : i) For Residential building $Ra \geq 80$ ii) For office and other types of buildings $70 \leq Ra < 85$ Driver: Should be of IEC standard such as MEANWELL/OSRAM/ENERGY+/SIGNIFY(PHILIPS) or equivalent, LED chips :EPISTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Colour temperature: 3500K-6500K (Warm-White), Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
				0	0	0
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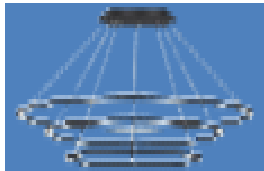
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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
6.1.2.1	Material: MS Sheet, Plastic Cover L-1200mm, GLORIA cat. no. GTF-789 Energy+-EPHL-28062 Cosmo Cat No-BDTCL-TLF-01, Asha Cat No. ACS-LTLS 3096x2x18W, or equivalent.		Each	2,295.00	2295	2293	2293
6.1.2.2	Material: Alu. body (Thick-1.5mm), Alu. Reflector, MS Sheet Total: Dia-110mm, H-130mm Gloria- GDL.444- 15W Energy+-EPHL-28058 Asha Cat No. ACS-LCP 1623 Cosmo Cat No-BDTCL-SDL-01 or equivalent.		Each	2,989.00	2989	2987	2987
6.1.2.3	Light source: 20W LED Bulb Material: Fabric body, G.I. Wire Fram, Round cable , MS Sheet Base, Total: Dia-400mm, H-300mm GLORIA cat. no. GCF-1209 Energy+ Cat No-EPHL-28059 Asha Cat No-ACS-LCP-1624, Cosmo Cat No-BDTCL-LHL-01, or equivalent .		Each	2,989.00	2989	2987	2987
6.1.2.4	Material: Alu. Alloy body (Thick-2mm), Alu. Reflector, MS Sheet Base Total: Dia-110mm, H-450mm Gloria cat no- GHPL (LED)-1157 Energy+ EPHL-28063 Asha Cat No. ACS-LCP 1320 or equivalent.		Each	2,989.00	2989	2987	2987

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
6.1.2.5	Material: Alu. body (Thick-2mm), SS/MS Sheet Base. Total: Body- Dia-75mm, H-300mm Asha Cat No. ACS-LCP 1364 (3) Cosmo Cat No. BDTCL-LHL-05 (5w x 1) Gloria -GHPL-1153(3), 3x5W Energy+-EPHL-28065 or equivalent.		Each	4,187.00	4187	4184	4184
6.1.2.6	Material: Alu Sheet, Acrylic 20W, Dia-510mm, H-600mm Gloria-GHPL-1171 Energy+-EPHL-28066 Asha Cat No. ACS-LCP 1308 Cosmo Cat No. BDTCL-LHC-05 or equivalent.		Each	10,240.00	10240	10237	10237
6.1.2.7	Material: Alu Sheet, Acrylic Gloria-GHPL-1199 Energy + EPHL 28027 Asha Cat No. ACS-LCP 1334 (3) 3x5W Cosmo Cat No. BDTCL-LHC-05 or equivalent.		Each	8,348.00	8348	8346	8346
6.2	<u>BRACKET LIGHT FITTINGS</u>			0	0	0	
6.2.1	<u>BRACKET LIGHT FITTINGS (Except Lamp)</u>			0	0	0	

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Providing & fixing of the fancy bracket light fitting with carrier, brass holder, earth terminal, necessary wiring with 2 x 0.4 sq.mm stranded PVC insulated flexible FR cable etc. The fittings shall be suitable for use of LED lamp and complete sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
				0	0	0
6.2.1.1	Light source: 1x9W LED Bulb Material: SS pipe (Size-30*30mm, thick-1.2mm) & SS Sheet body, Alu Sheet, MS Sheet, Glass. L-100mm, H-220mm, P-120mm GLORIA cat. no. GWBL-2505-2861 Energy+ Cat No EPWL-30003 Cosmo Cat No-BDTCLGWB-01 Asha Cat No-ACS-BS-1221 G57 Crescent-CB-1802/1 or equivalent.	 Each	971.00	971	968	968
6.2.1.2	Light source: 2x9W LED Material: SS pipe (Size-30*30mm, thick-1.2mm) & SS Sheet body, Alu Sheet, MS Sheet, Glass. L-240mm, H-220mm, P-120mm Gloria- GWBL-2506-2861 Energy+ Cat No EPWL-30004 Cosmo Cat No-BDTCL-GWB-02 Asha Cat No-ACS-BS-1222 G57 Crescent-CB-1802/2 or equivalent	 Each	1,728.00	1728	1726	1726

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.2.1.3	Light source: 1x9W LED Material: SS pipe (Dia-20mm, thick- 1.2mm) & SS Sheet body, MS Sheet, Glass. L-230mm, H-200mm, P-150mm GLORIA cat. no. GWBL-2503-2863 Energy+ Cat No-30007 Cosmo Cat No-BDTCL-GWB-03 Asha Cat No-ACS-BS-1223 G57 Crescent-CB-2028/1 or equivalent.	Each	1,728.00	1728	1726	1726
6.2.1.4	Light source: 2x9W LED Material: SS pipe (Dia-20mm, thick- 1.2mm) & SS Sheet body, MS Sheet, Glass. L-260mm, H-200mm, P-130mm Gloria- GWBL-2504-2863 Energy+ Cat No-30010 Asha Cat No-ACS-BS-1224 G57 Crescent-CB-2028/2 or equivalent or equivalent.	Each	2,484.00	2484	2482	2482
6.2.1.5	Light source: 9W LED Bulb Material: Brass/SS wire, Brass alloy, Brass/SS Sheet, Glass. H-220mm, B-185mm, P-170mm Gloria- GWB-1551-2135/FR Energy+ Cat No-8043 Cosmo Cat No-BDTCL-GWB-05/ Asha Cat No-ACS-BS87G540BP/ Crescent-CB-562-620-F or equivalent.	Each	1,170.00	1171	1168	1168



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.2.1.6	Light source: 9W LED Bulb Material: SS pipe & Sheet, Glass L-320mm H-120mm, B-90mm Gloria- GWBL- 2849- 7W Energy+ Cat No-8044 Cosmo Cat No-BDTCL-GWB-06 Asha Cat No-ACS-LBS-1158 Crescent-CB-2697 SL or equivalent	Each	3,027.00	3027	3024	3024
6.2.1.7	Light source: 9W LED Bulb Material: Brass/SS pipe (20mm), SS sheet, Alu Canopy, Glass L-200mm B-150mm P-130mm Gloria- GWB-1501-2101 Energy+ Cat No-8045 Cosmo Cat No-BDTCL-GWB-07 Asha Cat No. ACS-BS 3778 G529 GB Crescent-CB-431-592 FR or equivalent	Each	1,170.00	1171	1168	1168
6.2.1.8	Light source: 9W LED Bulb Material: Brass/SS pipe (Dia-12mm), SS sheet, Alu Canopy, Glass H-233mm B-194mm P-191mm Gloria- GWB-2781-2418 FR Energy+ Cat No-8046 Cosmo Cat No-BDTCL-GWB-07 Asha Cat No. ACS-BS 2786 G499 Crescent-CB-790-906 or equivalent.	Each	1,343.00	1343	1340	1340

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.2.1.9	Light source 9W LED Bulb Material: Brass/SS pipe (Dia-10mm), SS Sheet, Alu. Sheet, Glass H-222mm B-185mm P-90mm Gloria- GWB-2759-2420 Cosmo Cat No-BDTCL-GWB-11 Crescent-CB-565-970 BR Asha Cat No. ACS-BS 3231 or equivalent	Each	932.00	932	929	929
6.2.1.10	Light source 9W LED Bulb Material: Brass/SS Wire, Brass Alloy, SS Sheet, Alu. Sheet, Glass H-265mm B-147mm P-95mm Gloria- GWB-1607-2105 Energy+ Cat No-8048 Cosmo Cat No-BDTCL-GWB-10 Asha Cat No. ACS-BS 3103 G529 FR Crescent-CB-540(1)-584-FR or equivalent.	Each	1,343.00	1343	1340	1340
6.2.1.11	Light source 9W LED Bulb Material: Brass/SS pipe (20mm), SS sheet, Alu sheet, Glass H-200mm B-152mm P-100mm Gloria- GWB-1671-2255 FR Energy+ Cat No-8049 Cosmo Cat No-BDTCL-GWB-09 Asha Cat No. ACS-BS 3120 G510 C Crescent-CB-431-590 FR or equivalent	Each	776.00	776	773	773

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.2.1.12	Light source 9W LED Bulb Material: Brass/SS pipe (20mm), SS sheet, Alu sheet, Glass H-218mm B-162mm P-132mm Gloria cat no- GWB-1501-2297 FR Energy+ Cat No-8050 Asha Cat No. ACS-BS 2786 G498 Pata Crescent-CB-431 621 or equivalent	Each	776.00	776	773	773
6.2.1.13	Light source 12W LED Bulb Material: Aluminium Alloy, MS Sheet, Glass D-180mm H-240mm P-200mm Gloria cat no- GWB (LED)-1766 Energy+ EPGL 16031 Asha Cat No. ACS-WGL 954 Crescent-CB-561 or equivalent.	Each	2,251.00	2251	2249	2249
6.2.1.14	Light source 12W LED Bulb Material: Aluminium Alloy, MS Sheet, Glass D-175mm H-395mm P-205mm Gloria cat no- GWB (LED)-2895 Energy+ EPGL 16032 Asha Cat No. ACS-WGL 949 Crescent-CB-897 or equivalent.	Each	2,251.00	2251	2249	2249



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
6.2.1.15	Light source 9W LED Bulb Material: Brass/SS pipe (Dia-20mm) , Brass/SS Sheet, GI Wire, Fabric Size: 290mm*180mm*245mm Gloria Cat No GWBL 2891 Energy+ EPWL-8060 Cosmo Cat No. BDTCL-LWB-05 Asha Cat No. ACS-BS 1166 Crescent-CB-2026 CIG 206 1 L SL Energy+ EPWL-8060 or equivalent.		Each	1,911.00	1911	1908	1908
6.2.1.16	Light source 9W LED Bulb Material: Brass/SS pipe (Dia-20mm) , Brass/SS Sheet, Brass alloy, Glass, K9 Crystal Size: 310mm*155mm*220mm Gloria Cat No GWBL 2893 Energy+ EPWL-8061 Cosmo Cat No. BDTCL-LWB-06 Asha Cat No. ACS-BS 1205 or equivalent.		Each	1,570.00	1570	1567	1567
6.2.1.17	Light source 9W LED Bulb Material: Brass/SS pipe (Dia-20mm) , Brass/SS Sheet, Brass alloy, Glass, K9 Crystal Size: 310mm*360mm*220mm Gloria Cat No GWBL 2895 Energy+ EPWL-8062 Cosmo Cat No. BDTCL-LWB-07 Asha Cat No. ACS-BS 1206 or equivalent.		Each	2,705.00	2705	2703	2703
6.2.2	<u>BRACKET LED LIGHT FITTINGS</u>			0	0	0	
				0	0	0	

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
	Supply & fixing of wall bracket LED light fittings of following specifications: Luminous efficacy: 80 lm/w(minimum), Power Factor: minimum 0.95 Colour Rendering Index(Ra) : i) For Residential building Ra≥80 ii) For office and other types of buildings 70≤Ra<85 Driver: Should be of IEC standard such as MEANWELL/OSRAM/ENERGY+/SIGNIFY(P HILIPS) or equivalent LED chips :EPISTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Colour temperature : 3500K-6500K (Warm-White) Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0	
6.2.2.1	Material: Aluminium Sheet (Thick-3mm), MS Sheet Base. L-150mm H-160mm P-80mm Gloria- GWBL-2860 Energy+ EPWL-8030 Cosmo Cat No-BDTCL-LWB-02 Asha Cat No-ACS-LBS-122 or equivalent 10 Watt fittings		Each	2,484.00	2484	2482	2482
6.2.2.2	Material: Aluminium Alloy (thick-3mm), MS Sheet. L-420mm H-70mm P-80mm Gloria cat no- GWBL-2838 Energy+ EPWL-8051, Asha Cat No. ACS-LBS 1110 or equivalent 12 Watt fittings.		Each	2,043.00	2043	2040	2040

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.2.2.3	Material: MS Sheet, Aluminium Alloy, Acrylic (Thick-15mm) L-220mm H-170mm P-60mm Gloria- GWBL-2856 Energy+ EPWL-8031, Cosmo Cat No-BDTCL-LWB-01/ Asha Cat No-ACS-LBS-1101/ or equivalent 12Watt fittings	Each	2,251.00	2251	2249	2249
6.2.2.4	Material: Aluminium Alloy (thick-3mm), MS Sheet, Acrylic (Thick-15mm) L-300mm H-100mm P-50mm Gloria cat no- GWBL-2855 Energy+ EPWL-8041, Cosmo Cat No-BDTCL-LWB Asha-ACS-LBS-1130 or equivalent 12Watt fittings	Each	2,167.00	2166	2164	2164
6.2.2.5	Material: Aluminium Alloy (thick-2mm), MS Sheet, Acrylic (Thick-15mm) L-140mm H-180mm P-75mm Gloria cat no- GWBL-GWBL-2873 Energy+ EPWL-8053, or equivalent 12Watt fittings.	Each	2,705.00	2705	2703	2703
6.2.2.6	Material: Aluminium Alloy (thick-2mm), MS Sheet, Acrylic (Thick-15mm) L-140mm H-180mm P-75mm Gloria cat no- GWBL-2871 Energy+ EPWL-8054, or equivalent 12 Watt fittings.	Each	2,705.00	2705	2703	2703
6.2.2.7	Material: Aluminium Alloy (thick-3mm), Acrylic (thick-3mm) L-200mm H-80mm P-100mm Gloria cat no- GWBL-2841 Energy+ EPWL-8055, Cosmo Cat No-BDTCL-LWB-07 or equivalent 12 Watt fittings.	Each	3,046.00	3045	3043	3043

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Item No.	Description of Items		Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.2.2.8	Material: Aluminium Alloy (thick-3mm), MS Sheet, Acrylic (Thick-15mm) L-140mm H-180mm P-75mm Gloria cat no- GWBL-2869 Energy+ EPWL-8056, or equivalent 12 Watt fittings.		Each	2,705.00	2705	2703	2703
6.2.2.9	Material: Aluminium Alloy (thick-3mm) + Acrylic Gloria Cat No GWBL 2883 Energy+ EPWL-8057, Cosmo Cat No. BDTCL-LWB-03 , Asha Cat No. ACS-LBS 1115 or equivalent.						
6.2.2.9.1	6 W						
6.2.2.9.2	10 W						
6.2.2.9.3	15 W		Each	3,046.00	3045	3043	3043
6.2.2.10	Material: Aluminium Alloy (thick-3mm) + Aluminium Reflector Gloria-GWBL-2885 Energy+ EPWL-23027, Cosmo Cat No. BDTCL-WSL-01 Asha Cat No. ACS-LBS 1143 or equivalent.		Each	2,648.00	2648	2645	2645
6.2.2.10.1	6 W						
6.2.2.10.2	10 W						
6.2.2.10.3	15 W						
6.2.2.11	Material: Aluminium Alloy (thick-3mm) + Aluminium Reflector + Glass Gloria Cat No GWBL 2887 Energy+ EPWL-8058, Cosmo Cat No. BDTCL-LWB-04 Asha Cat No. ACS-LBS 1109 or equivalent.		Each	2,875.00	2876	2873	2873
6.2.2.11.1	6 W						

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.2.2.11.2	10 W	Each	2,932.00	2932	2929	2929
6.2.2.11.3	15 W	Each	3,046.00	3045	3043	3043
6.2.2.12	Material: Aluminium Alloy (thick-3mm), Acrylic (thick-15mm) Gloria Cat No GMWB. 2993 Energy+ EPSL-49008, Cosmo Cat No. BDTCL-LWB-05 Asha Cat No. ACS-LBS 1271 MS or equivalent motion sensor light fittings..					
				0	0	0
6.2.2.12.1	6 W	Each	3,273.00	3272	3270	3270
6.2.2.12.2	10 W	Each	3,386.00	3386	3383	3383
6.2.2.12.3	15 W	Each	3,556.00	3556	3554	3554
6.2.2.13	Material: Aluminium Alloy (thick-3mm) + Crystal Acrylic (Dia-95mm H-90mm) Gloria Cat No GMWB 2997 Energy+ EPSL-49009, Cosmo Cat No. BDTCL-WSL-18 Asha Cat No. ACS-LBS 1275 MS or equivalent motion sensor light fittings..					
				0	0	0
6.2.2.13.1	6 W	Each	3,386.00	3386	3383	3383
6.2.2.13.2	10 W	Each	3,851.00	3851	3849	3849
6.2.2.13.3	15 W	Each	4,056.00	4055	4053	4053
6.2.2.14	Material: Aluminium Alloy (thick-2mm), MS Sheet, Acrylic (thick-15mm) Size: 250x150x50mm Gloria-GWBL-2896 Energy+ EPBL-23027 or equivalent motion sensor light fittings.					
		Each	2,932.00	2932	2929	2929

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.2.2.15	Material: Aluminium Alloy (thick-2mm), MS Sheet, Acrylic (thick-15mm) Size: 200x150x50mm Gloria GWML 2898 Energy+ EPBL-23028 or equivalent motion sensor light fittings..	Each	3,159.00	3159	3156	3156
6.3	<u>CHANDELIER LIGHT FITTING</u>			0	0	0
6.3.1	CHANDELIER LIGHT EXCEPT LAMP Providing & fixing of the Chandelier light fitting with brass holder, cylindrical brass carrier suitable for use with candle lamp, earth terminal, necessary wiring with 2 x 0.4 sq.mm stranded PVC insulated flexible FR cable etc. complete. (except lamp). The fittings shall be suitable for use of LED lamp and complete sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
6.3.1.1	Light source 6x4W LED Bulb Material: Brass/SS pipe(Dia-10mm), Brass/SS Sheet, Brass Alloy, K9 Crystal Size: Dia-550mm H-550mm Gloria- GCF-3117 (6)- Crystal Energy + EPCC-26063 Cosmo Cat No-BDTCL-CC-02 Asha cat no-ACS-CJ 13 L-6 Crescent-CR 295 (5) Crystal or similar product of SUNKO/ Annyesha/ SHWASH or equivalent foreign made.	Each	9,799.00	9798	9796	9796



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.3.1.2	Light source 12x4W LED Bulb Material: Brass/SS pipe(Dia-10mm), Brass/SS Sheet, Brass/SS wire, K9 Crystal Size: Dia-650mm H-650mm GLORIA cat.no. GCHL-3119(12)- crystal Energy + EPCC-26064 Cosmo Cat No-BDTCL-CC-03 Asha cat no-ACS-CT 24 L-12 Crescent-CR 369 Crystal or similar product of SUNKO/ Annyesha/ SHWASH or equivalent foreign made.	Each	51,415.00	51414	51411	51411
6.3.1.3	Light source 6x4W LED Bulb Material: Brass/SS pipe(Dia-10mm), Brass/SS Sheet, Brass Alloy, K9 Crystal Size: Dia-550mm H-550mm Energy + EPCC-26065 Cosmo Cat No-BDTCL-CC-04 Asha cat no- ACS-CJ 1004 L-9 Crescent-CR 273 Crystal or similar product of SUNKO /Annyesha/ SHWASH or equivalent foreign made.	Each	15,032.00	15032	15030	15030
6.3.1.4	Light source 16x4W LED Bulb Material: Zink Alloy, Glass, K9 Crystal GLORIA cat.no. GCHL 3355 (16) Energy + EPCC-26001 Cosmo Cat No. BDTCL-CC-18 Asha Cat No. ACS-CJ 1005 L-14 or similar product of SUNKO/ Annyesha/ SHWASH or equivalent foreign made.	Each	36,093.00	36092	36090	36090

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.3.1.5	Light source 8x4W LED Bulb Material: Brass/SS pipe(Dia-10mm), Brass/SS Sheet, Brass/SS wire, Crystal Size: Dia-410mm H-650mm Gloria Cat. No: GCHL.3123 (8) crystal Energy + EPCC-26066 Asha Cat No. ACS-CJ 38 L-12 Crescent-CR 20104 GD CY Watt: 8x4W LED bulb, Voltage: AC85-265V, or similar product of SUNKO/ Annyesha/ SHWASH or equivalent foreign made	Each	48,704.00	48703	48700	48700
6.3.1.6	Light source 16x4W LED Bulb Material: Zink Alloy, Glass, K9 Crystal Gloria Cat. No: GCHL.3340 (16) Energy + EPCC-26067 Adex- AD-CL- OM711 Asha Cat No. ACS-CJ 1006 L-16 Crescent-CR 331 550 CY GD Watt: 16x4W LED bulb, Voltage: AC85-265V, Installation Type : Semi Flush mount or similar product of SUNKO/ Annyesha/ SHWASH or equivalent foreign made.					
6.3.2	<u>CHANDELIER LED LIGHT FITTING</u>	Each	22,857.00	22857	22855	22855
				0	0	0
				0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
	Supply & fixing of Chandelier LED light fittings of following specifications: Luminous efficacy: 80 lm/W (minimum), Power Factor: minimum 0.95 Colour Rendering Index(Ra) : i) For Residential building $Ra \geq 80$ ii) For office and other types of buildings $70 \leq Ra < 85$ Driver: Should be of IEC standard such as MEANWELL/OSRAM/ENERGY+/SIGNIFY(PHILIPS) or equivalent LED chips :EPISTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Colour temperature : 3500K-6500K (Warm-White) Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).						
				0	0	0	
				0	0	0	
6.3.2.1	Material: Aluminium Alloy, Acrylic, MS Sheet Gloria- GCL-3320 ENERGY + cat. no.- EPC-27009 Cosmo Cat No-BDTCL-LCFC-03 Asha Cat No. ACS-LCJ 119 or similar product of SUNKO/ Annyesha/ SHWASH/ Crescent or equivalent foreign made.		Each	30,418.00	30417	30415	30415

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
6.3.2.2	Material: Aluminium Alloy. Acrylic, MS Sheet Gloria- GCL-3321 ENERGY + cat. no. - EPC-27003 Cosmo Cat No-BDTCL-LCFC-06 Asha Cat No. ACS-LCJ 121 or similar product of SUNKO/ Annyesha/ SHWASH/ Crescent or equivalent foreign made.		Each	25,373.00	25373	25371	25371
6.3.2.3	Material: Aluminium Sheet, MS Sheet, Acrylic Gloria-GCL.3370 Energy + EPC-27024 Adex- AD-CL- OM8861 Asha Cat No. ACS-LCJ 122 (6) Crescent-CRI 1036 LD WH or similar product of SUNKO/ Annyesha/ SHWASH or equivalent foreign made.		Each	18,418.00	18418	18416	18416
6.3.2.4	Material: Aluminium Sheet, MS Sheet, Acrylic Gloria-GHPL.1196 , Energy + EPC-27025 Adex- AD-CL-OM88045-7 Asha Cat No. ACS-LCP 1336 (3) or similar product of SUNKO/ Annyesha/ SHWASH/ Crescent or equivalent foreign made.		Each	19,698.00	19697	19695	19695
6.3.2.5	Material: Aluminium Sheet, MS Sheet, Acrylic Adex- AD-CL-OM88439 Asha Cat No. ACS-LCP 1314 (2) Energy + EPC-27026 Gloria-GHPL.1197 or similar product of SUNKO/Annyesha/SHWASH/Crescent or equivalent foreign made.		Each	26,004.00	26004	26001	26001

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.3.2.6	Material: MS/SS Sheet, K9 Crystal Size: 450*900mm Energy + EPCC-26068 Gloria Cat No GCL 3327 or similar product of SUNKO/Annyesha/SHWASH/Crescent or equivalent foreign made.	Each	28,526.00	28526	28523	28523
6.3.2.7	Material: MS/SS Sheet, K9 Crystal Size: 600*600mm Gloria-GCL-3329 Energy + EPCFL-36001 ADEX- AD-MCL- LW90613 Asha Cat No. ACS-LCJ 1371 or similar product of SUNKO/ Annyesha/ SHWASH/ Crescent or equivalent foreign made.	Each	56,901.00	56899	56897	56897
6.3.2.8	Material: MS/SS Sheet, K9 Crystal Size: 600mm Gloria- GCL-3334 Energy + EPCC-26069 ADEX- AD-CL- LW88045-7 Asha Cat No. ACS-LCJ 103 or similar product of SUNKO/ Annyesha/ SHWASH/ Crescent or equivalent foreign made.	Each	35,462.00	35462	35459	35459
6.4	<u>BATHROOM LIGHT FITTING</u>			0	0	0
6.4.1	<u>BATHROOM LIGHT FITTING(EXCEPT LAMP)</u>			0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Providing & fixing of the bath-room light fitting consisting of oxidized or golden or chromium plated brass base with carrier, brass holder , earth terminal, necessary wiring with 2 x 0.4 sq.mm stranded PVC insulated flexible FR cable etc. The fittings shall be suitable for use of LED lamp and complete sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0 0	0 0	0 0
6.4.1.1	Light source 9W LED Bulb Material: SS Sheet, SS/Brass pipe (Dia-10mm), Aluminium Sheet, Glass L-350mm B-120mm P-90mm GLORIA cat. no. GBB-959-2105-FR Energy+ Cat no-EPML-10038 Cosmo Cat No-BDTCL-MLF-01 Asha Cat No. ACS-BB 2802 TTG Crescent-CB-476/9-644/9 Watt: 9W LED Bulb or equivalent		Each	971.00	971 0	968 0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.4.1.2	Providing & fixing of 1 x 2'-0" tube light fitting made of 22 SWG sheet steel rust proof powder coated base & designed perspex sheet cover each of minimum length 640 mm (breadth of fitting 70mm), holder, earth terminal, necessary wiring with 2 x 0.4 sq.mm stranded PVC insulated flexible FR cable etc. complete set (except lamp) as per sample accepted / approved by the Engineer-in-charge (with 2 years warranty). GLORIA cat. no. GTF-755 x1x10 W Energy+ Cat no-EPML-10039 Cosmo Cat No-BDTCL-MLF-02 Adex-AD-TUL- 10W 830/840/865 Asha Cat No. ACS-TLS 317x1x10W Crescent-CBBI -1008 LD SI or equivalent.	Each	760.00	761	757	757
6.4.2	<u>BATHROOM LIGHT FITTING (LED)</u>			0	0	0
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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
	Supply & fixing LED bathroom light fittings of the following specifications: Luminous efficacy: 80 lm/w(minimum), Power Factor: minimum 0.95 Colour Rendering Index(Ra) : i) For Residential building Ra≥80 ii) For office and other types of buildings 70≤Ra<85 Driver: Should be of IEC standard such as MEANWELL/OSRAM/ENERGY+/SIGNIFY(PHILIPS) or equivalent LED chips :EPISTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Colour temperature : 3500K-6500K (Warm-White) Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0	
6.4.2.1	Material: MS Sheet, Aluminium Sheet, Acrylic (thick-12mm) L-400mm H-90mm P-40mm GLORIA cat No.GLML. 2106, Energy+ Cat no-EPML-10029 (small) Cosmo Cat No-BDTCL-LML-01 Asha Cat no-ACS –LBB-2837 or equivalent 15 Watt fittings		Each	3,273.00	3272	3270	3270

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.4.2.2	Material: MS Sheet, Aluminium Sheet, Acrylic (thick-12mm) L-400mm H-90mm P-40mm Gloria Cat No-GLML-2129 Energy+ Cat no-EPML-10040 Cosmo cat no-BDTCL-LML-02 Asha Cat no-ACS -LBB-2838 or equivalent 10 Watt fittings	Each	2,535.00	2534	2532	2532
6.4.2.3	Material: MS Sheet, Aluminium Sheet, Acrylic (thick-20mm), Brass alloy L-480mm P-170mm Gloria Cat No-GLML-2132, ENERGY + cat. no. - EPML-10034 Cosmo cat no-BDTCL-LML-05 Asha Cat no-ACS -LBB-2839 or equivalent 15 Watt fittings	Each	3,682.00	3682	3680	3680
6.4.2.4	Material: Aluminium Alloy (thick-2mm), MS Sheet, Acrylic (thick-15mm) L-400mm H-100mm P-40mm Gloria cat no- GLML-2155 Energy+ Cat no-EPML-10041 Asha Cat No. ACS-LBB 1423 or equivalent 10 Watt fittings.	Each	3,386.00	3386	3383	3383
6.4.2.5	Material: Aluminium Alloy (thick-4mm), MS Sheet, Acrylic (thick-15mm) Size: L-315mm H-120mm P-80mm Gloria cat no- GLML-2153 Energy+ Cat no-EPML-10042 Asha Cat No. ACS-LBB 1424 or equivalent 12 Watt fittings.	Each	3,386.00	3386	3383	3383

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Item No.	Description of Items		Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.4.2.6	Material: MS Sheet, Aluminium Sheet, Brass Alloy, Acrylic (thick-18mm) Size: L-310mm H-60mm P-80mm Gloria cat no- GLML-2151 Energy+ Cat no-EPML-10022(small) Cosmo cat no-BDTCL-LML-04 Asha Cat No. ACS-LBB 1480 or equivalent 10 Watt fittings .		Each	3,273.00	3272	3270	3270
6.4.2.7	Material: MS Sheet, Aluminium Sheet, Brass Alloy, Acrylic (thick-18mm) Size: L-375mm H-60mm P-80mm Gloria cat no- GLML-2123 Energy+ EPML-10022(big) Cosmo cat no-BDTCL-LML-04 Asha Cat No. ACS-LBB 1480 (B) or equivalent 10 Watt fittings.		Each	3,500.00	3499	3497	3497
6.4.2.8	Material: MS Sheet, Aluminium Sheet, Acrylic (thick-12mm) L-450mm H-90mm P-40mm Gloria cat no- GLML-2106 Energy+ EPML-10029(big) Cosmo-BDTCL-LML-01 Asha Cat No. ACS-LBB 2837 (B) or equivalent 10 Watt fittings.		Each	3,102.00	3103	3100	3100
6.4.2.9	Material: MS Sheet, Aluminium Sheet, Acrylic (thick-18mm) Size: L-500mm H-100mm P-70mm Gloria cat no- GLML-2142 Asha-ACS-LBB-1413 or equivalent 12 Watt fittings.		Each	3,216.00	3216	3214	3214

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.4.2.10	Material: MS/SS Sheet, Acrylic (thick-15mm) Size: L-420mm P-75mm Gloria cat no- GLML-2145 Energy+ EPML-10043 Asha-ACS-LBB-1416 or equivalent 10 Watt fittings.	Each	3,329.00	3329	3327	3327
6.4.2.11	Light source 2x9W LED Bulb Material: Brass/SS wire, Brass/SS Sheet, Brass Alloy, Aluminium Sheet, Glass Size: B-266mm H-260mm P-156mm Gloria cat no- GWB-1608-2105-FR Energy+ EPML-10044 Cosmo-BDTCL-GWB-12 Asha Cat No. ACS-BD 3104 G529 FR Crescent-CB-540(2)-584 FR or equivalent 2x9W fittings.					
6.4.2.12	Light source 9W LED Bulb Material: Brass/SS Sheet, Brass/SS pipe, Brass Alloy, Glass Size: L-305mm B-105mm P-85mm Gloria cat no- GLML-961-2127-FR Energy+ EPML-10045 Cosmo Cat No. BDTCL-MLF-01 Asha Cat No. ACS-BB 3042 FR Crescent-CB-605/9 LED-1X7, 9W or equivalent 9w fittings	Each	1,003.00	1003	1000	1000



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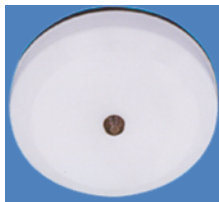
Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.4.2.13	Material: SS Sheet, MS Sheet, Brass Alloy, Crystal Size: L-480mm P-120mm Gloria cat no- GLML-2162 Energy+ EPML-10046 Cosmo Cat No. BDTCL-LML-03 Asha Cat No. ACS-LBB 1406 Crescent-CDSL-2019-3L or equivalent	Each	3,613.00	3612	3610	3610
6.4.2.14	Material: SS Sheet, MS Sheet, Aluminium Sheet, Acrylic (thick-18mm) Size: L-420mm P-75mm Gloria-GWML-2142 Cosmo Cat No. BDTCL-LML-04 Asha Cat No. ACS-LBB 1413 B or equivalent.	Each	4,237.00	4237	4234	4234
6.5	<u>CEILING MOUNTED SAUCER & SPOT LIGHT FITTINGS (EXCEPT LAMP)</u>			0	0	0
6.5.1	Fancy Saucer Light Providing & fixing of the fancy saucer light fitting(except lamp) with brass holder, earth terminal, necessary wiring with 2 x 0.4 sq.mm stranded PVC insulated flexible FR cable. The fittings shall be suitable for use of LED lamp and complete sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.5.1.1	Light source 7W LED Bulb Material: MS Sheet , Brass Alloy, Glass Size: D-292mm H-110mm Gloria Cat No-GCLF-885 Energy+ EPSL-9017 Cosmo cat no-BDTCL-SL-01 Asha Cat No. ACS-P 2835 BRDP Crescent-CPS-17--GOLD Ring or equivalent	Each	1,286.00	1287	1284	1284
6.5.1.2	Light source 12W LED Bulb Material: MS Sheet, Brass Alloy , Opel Acrylic (thick-2.5mm) Size: D-350mm L-120mm GLORIA cat. no. GCF- 801X1"X32W opel Energy+ EPSL-9018 Cosmo cat no-BDTCL-SL-02 Adex-AD-SCL /20W 830/840/865 Asha Cat No. ACS-TLS 415 EX20W Crescent-CML-42(32W R/T) or equivalent (with lamp)	Each	1,349.00	1349	1346	1346
6.5.1.3	Light source 9W LED Bulb Material: SS/MS Sheet, Aluminium Reflector Size: D-140mm H-165mm GLORIA cat. no. GDL-463(M) Cosmo cat no-BDTCL-DLF-01 Asha Cat No. ACS-S 2845 Crescent-CML-369 or equivalent	Each	885.00	885	883	883



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.5.1.4	Light source 7W LED Bulb Material: SS/MS Sheet, Brass alloy, Glass Size: D-260mm H-135mm Gloria Cat No-GCLF-640 Energy+ EPSL-9019 Cosmo cat no-BDTCL-SL-03 Asha Cat No. ACS-P 3406 Crescent-CPC-35-CIG-30 or equivalent	Each	845.00	845	843	843
6.5.1.5	Light source 7W LED Bulb Material: SS/MS Sheet, Glass Size: D-215mm H-92mm Gloria Cat No-GCLF-692 Energy+ EPSL-9020 Cosmo cat no-BDTCL-SL-04 Asha Cat No. ACS-P 2816 Crescent-CMP-23 or equivalent	Each	971.00	971	968	968
6.5.1.6	Light source 12W LED Bulb Material: SS/MS Sheet, Glass Size: D-293mm H-95mm Gloria Cat No-GCF-696 Energy+ EPSL-9021 Cosmo cat no-BDTCL-SL-05 Asha Cat No. ACS-P 2871 Crescent-CPC-51-FG or equivalent	Each	971.00	971	968	968

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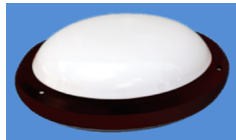
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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.5.1.7	Light source 15W LED Bulb Material: MS Sheet Size: 180x180x95mm Gloria Cat No-GCF-643 Energy+ EPSL-9022 Cosmo cat no-BDTCL-SL-06 Asha Cat no- ACSP-3474 Crescent-CPM-20 or equivalent	Each	845.00	845	843	843
6.5.1.8	Light source 7W LED Bulb Material: MS Sheet, Brass alloy, Glass Size: D-313mm H-126mm Gloria cat no- GCLF-640 LED/CFL-7 w Energy+ EPSL-9023 Asha Cat No. ACS-P 3652 Crescent-CPM-423-P-BLK or equivalent.	Each	1,223.00	1223	1221	1221
6.5.1.9	Light source 9W LED Bulb Material: MS Sheet, Glass Size: D-250mm H-110mm Gloria cat no- GCLF-601 LED/CFL-9 w Energy+ EPSL-9024 Asha Cat No. ACS-P 2839 P 10" Crescent-CPM-10 WH or equivalent.	Each	845.00	845	843	843

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
6.5.1.10	Light source 7W LED Bulb Material: MS Sheet, Opel Acrylic (thick-2.5mm) Size: D-264mm H-90mm Gloria cat no GCLF-884 LED/CFL-7W Energy+ EPSL-9025 Asha Cat No. ACS-P 2803 Crescent-CPM-56 (22Watt R/T) or equivalent.		Each	845.00	845	843	843
6.5.1.11	Light source 7W LED Bulb Material: SS/MS Sheet, Glass Size: D-215mm H-92mm Gloria cat no- GCLF-692 LED/CFL-7W Energy+ EPSL-9026 Asha Cat No. ACS-P 1169 Crescent-CPM-2073-CIG-12-BLK or equivalent		Each	845.00	845	843	843
6.5.2	<u>SPOT/PANEL LED LIGHT FITTINGS</u>			0	0	0	
				0	0	0	

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply & fixing spot/Panel LED light fittings of following specifications: Luminous efficacy: i) For Spot/Bracket LED Light Fittings: 80 lm/W (min), ii) For Panel/Tube Light Fittings: 100 lm/W (min) Power Factor: minimum 0.95 Colour Rendering Index(Ra) : i) For Residential building $Ra \geq 80$ ii) For office and other types of buildings $70 \leq Ra < 85$ Driver: Should be of IEC standard such as MEANWELL/OSRAM/ENERGY+/SIGNIFY(PHILIPS) or equivalent LED chips :EPISTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Colour temperature : 3500K-6500K (Warm-White) Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).					
				0	0	0
				0	0	0
6.5.2.1	Round panel (surface type) Material: Alu Alloy, Acrylic Gloria Cat No-GSDL-513 Energy + cat No-EPPLLED-2006 Cosmo cat no-BDTCL-LSRPL-01 Adex-AD SDL 830/840/865 Asha Cat no- ACS LPL-1451 Megaman-MXTL1013-Y Walton WLED-DSPLR-200-UL or equivalent					
						
				0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.5.2.1.1	6 W , Approximate Dia - 127 mm	Each	757.00	756	754	754
6.5.2.1.2	12 W, Approximate Dia -165 mm	Each	971.00	971	968	968
6.5.2.1.3	18 W, Approximate Dia -218 mm	Each	1,097.00	1098	1095	1095
6.5.2.1.4	24 W, Approximate Dia - 297 mm	Each	1,387.00	1387	1384	1384
6.5.2.2	Round panel (concealed type) Material: Alu Alloy, Acrylic Gloria- GDLR-105 ENERGY+ cat. no.- EPPLLED 2012 Adex-AD SDL 830/840/865 Asha Cat No. ACS-LS 1523 (1) Megaman-MQTL1092-Y Walton: WLED-SPLS120/145/200UL Pasha Cat No PE-SPY-05 or equivalent	Each		0	0	0
6.5.2.2.1	6 W , Approximate Dia- 93 mm		593.00	593	590	590
6.5.2.2.2	12 W, Approximate Dia-152 mm		757.00	756	754	754
6.5.2.2.3	18 W, Approximate Dia 203 mm		958.00	959	956	956
6.5.2.2.4	24 W, Approximate Dia 279 mm		1,097.00	1098	1095	1095
6.5.2.3	Material: Alu Alloy, Acrylic Gloria Cat No-GSDL-514 Energy + cat No-EPPLLED-2005 Cosmo cat no-BDTCL-LSSPL-01 Adex-AD SDL 830/840/865 Asha Cat no- ACS LPL-1460 Megaman-MXTL1013-F-PS Walton: WLED-DSPLS-225-ULor equivalent square panel light fittings.	Each		0	0	0
6.5.2.3.1	6 W , Approximate size- 127 mm(Each side)		757.00	756	754	754
6.5.2.3.2	12 W, Approximate Size - 173 mm(Each side)		971.00	971	968	968
6.5.2.3.3	18 W, Approximate Size - 221 mm(Each side)		1,097.00	1098	1095	1095
6.5.2.3.4	24 W, Approximate Size - 297 mm(Each side)		1,387.00	1387	1384	1384



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.5.2.4	Material: Alu Alloy, Acrylic Gloria Cat No-GDSL-104 ENERGY+ cat. no.- EPPLLED 2015 Asha Cat no- ACS LPL-1456 Megaman-MQTL1092-F or equivalent.			0	0	0
6.5.2.4.1	6 W , Approximate Size - 76 mm(Each Side)	Each	719.00	718	716	716
6.5.2.4.2	12 W, Approximate Size 127 mm(Each Side)	Each	1,185.00	1185	1183	1183
6.5.2.4.3	18 W, Approximate Size 165 mm(Each Side)	Each	1,513.00	1513	1511	1511
6.5.2.5	Material: Alu Alloy, Acrylic GLORIA cat. no.- GDLS-119 Energy + cat No-EPPLLED-2010 Cosmo cat no-BDTCL-LCSPL-02 Adex-AD SDL 830/840/865 Asha Cat No. ACS-LPL 1461 Walton :WLED -SPLS-120/145/200-UL or equivalent			0	0	0
6.5.2.5.1	6 W	Each	837.00	838	835	835
6.5.2.5.2	9 W	Each	1,059.00	1060	1057	1057
6.5.2.5.3	12 W	Each	1,286.00	1287	1284	1284
6.5.2.5.4	18 W	Each	1,457.00	1456	1454	1454
6.5.2.5.5	24 W	Each	1,665.00	1665	1662	1662
6.5.2.6	Material: Aluminium alloy (thick-2.5mm), Alu reflector, Glass Size: Dia-85mm Gloria Cat no- GCDL-322, 5W Energy+ EPCSL-6053 Cosmo cat no-BDTCL-CSL-01 (5W) Adex-AD SLM 5W 830/840 Asha Cat No. ACS-LS 1501 Pasha Cat No PECS008001/7W or equivalent	Each	1,003.00	1003	1000	1000

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.5.2.7	Material: Aluminium alloy (thick-2.5mm), Alu reflector, Glass Size: 115*115mm GLORIA cat. no.- GCDL-332 (9 W) Energy + EPCSL-6071 Cosmo cat no-BDTCL-CSL-03 (9W) Adex-AD SLM 8W 830/840 Asha Cat No. ACS-LS 1596 or equivalent	Each	1,786.00	1786	1783	1783
6.5.2.8	Material: Aluminium alloy (thick-3mm), Alu reflector, Glass Size: D-75mm H-110mm Gloria Cat no- GSDL-519, 10W Energy+ cat no-EPSDL-5004 Cosmo cat no-BDTCL-SDL-02 Asha Cat no-ACS LS-1568 (15/24 w) or equivalent					
6.5.2.9	Material: Aluminium alloy (thick-3mm), Alu reflector, Glass Size: D-75mm H-110mm Gloria Cat no- GSDL-531, 7W Energy+ cat no-EPSDL-5008 Cosmo cat no-BDTCL-SDL-04 Asha Cat no-ACS LS-1560 (7/12/18 w) or equivalent					
6.5.2.10	Ceiling surface moving light Material: Aluminium alloy (thick-2mm), Aluminium reflector, PC cover, Glass Size: Dia-75mm Gloria-GLSL-1335, 10W Energy+ cat no-EPSSL-4102 Asha Cat No. ACS-LS 1536 or equivalent					



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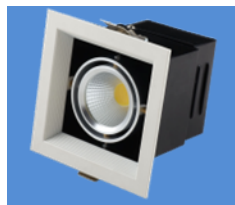
Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.5.2.11	Material: Alu Sheet/Aloy, Acrylic GLORIA Cat No GSDL 565 Energy+ EPPLD-2027 Cosmo Cat No. BDTCL- LSSPL-02 Asha Cat No. ACS-LPL 1459 , or equivalent.			0	0	0
6.5.2.11.1	6W	Each	1,184.00	1184	1182	1182
6.5.2.11.2	12W	Each	1,395.00	1395	1393	1393
6.5.2.11.3	18W	Each	1,525.00	1525	1522	1522
6.5.2.11.4	24W	Each	1,774.00	1774	1772	1772
6.5.2.12	Material: Alu Aloy, Acrylic Gloria -GCDL 386 Energy+ EPPLD-2020 Cosmo Cat No. BDTCL- LCRPL-03 Asha Cat No. ACS-LPL 1468 or equivalent.			0	0	0
6.5.2.12.1	6W	Each	696.00	696	694	694
6.5.2.12.2	12W	Each	866.00	866	864	864
6.5.2.12.3	18W	Each	1,003.00	1003	1000	1000
6.5.2.12.4	24W	Each	1,343.00	1343	1340	1340
6.5.2.13	Material: Alu Aloy, Acrylic Gloria-GCDL 387 Asha Cat No. ACS-LPL 1466 Cosmo Cat No. BDTCL- LCSPL-03 or equivalent.			0	0	0
6.5.2.13.1	6W	Each	696.00	696	694	694
6.5.2.13.2	12W	Each	866.00	866	864	864
6.5.2.13.3	18W	Each	1,003.00	1003	1000	1000
6.5.2.13.4	24W	Each	1,343.00	1343	1340	1340
				0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.5.2.14	Motion Sensor ,Material: Alu Alloy GLORIA GMSL. 231 Energy+ EPSL-49010 Cosmo Cat No. BDTCL- LSL-05 Asha Cat No. ACS-LPL 1476 MS or equivalent.			0	0	0
6.5.2.14.1	6W	Each	1,797.00	1797	1794	1794
6.5.2.14.2	12W	Each	2,308.00	2307	2305	2305
6.5.2.14.3	18W	Each	2,875.00	2876	2873	2873
6.5.2.15	Material: Aluminium alloy Acrylic , Aluminium reflector GLORIA Cat No GCDL 389 Energy+ EPCSL-6072 Cosmo Cat No. BDTCL- CSL-05 Asha Cat No. ACS-LS 1512 (2) or equivalent.			0	0	0
6.5.2.15.1	2x6W	Each	1,570.00	1570	1567	1567
6.5.2.15.2	2x9W	Each	2,194.00	2194	2192	2192
6.5.2.15.3	2x12W	Each	2,819.00	2818	2816	2816
6.5.2.16	Material: Alu Sheet/Aloy, MS Sheet, Acrylic, Aluminium reflector Gloria-GCDL-603 Energy+ EPCSL-6012(single) Cosmo Cat No. BDTCL- CSL-06 Asha Cat No. ACS-LS 1523 (1) or equivalent.			0	0	0
6.5.2.16.1	9W	Each	1,570.00	1570	1567	1567
6.5.2.16.2	12W	Each	2,478.00	2478	2476	2476



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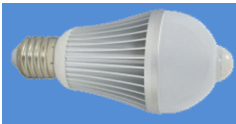
Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.5.2.17	Material: Alu Sheet/Aloy, MS Sheet, Acrylic, Aluminium reflector Gloria-GCDL-603X2 Energy+ EPCSL-6012(double) Cosmo Cat No. BDTCL- CSL-07 Asha Cat No. ACS-LS 1507 (2) or equivalent.			0	0	0
6.5.2.17.1	2x6W	Each	2,433.00	2433	2431	2431
6.5.2.17.2	2x12W	Each	3,046.00	3045	3043	3043
				0	0	0
6.5.3	<u>MOTION SENSOR LIGHT</u>			0	0	0
6.5.3.1	Supply & fixing of LED fittings with motion sensor for light control having the following feature :- (i) Material: Aluminium alloy Acrylic, Suitable to use in foyer, bed room , kitchen , bathroom, corridor etc. (ii) Input voltage : 110 ~ 240 V/AC (iii) Detection distance: 9m (maximum) (<24°) (iv) Auto on/off selection. (v) Light 'ON' time : Instant Light 'OFF' time : from 6 sec ~ 12 min (adjustable) (vi) Asha Cat No. ACS-LPL 1478 MS Cosmo cat no-BDTCL-LSL-01 ENERGY+ cat. no. : EPPLLED 2019 Gloria Cat No GMSL.555 or equivalent (vii) complete sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty)			0	0	0
6.5.3.1..1	6 watt	Each	1,539.00	1539	1536	1536
6.5.3.1..2	12 watt	Each	1,728.00	1728	1726	1726
6.5.3.1..3	18 watt	Each	2,106.00	2106	2104	2104



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.5.3.2	Motion sensor spot light Material: Aluminium alloy Acrylic Gloria-GMSL 225 Energy+ EPLLED-2026 Cosmo Cat No. BDTCL- LSL-04 Asha Cat No. ACS-LPL 1471 MS or equivalent.					
						
				0	0	0
6.5.3.2.1	6W	Each	2,024.00	2024	2022	2022
6.5.3.2.2	12W	Each	1,570.00	1570	1567	1567
6.5.3.2.3	18W	Each	1,911.00	1911	1908	1908
6.5.3.3	Motion sensor LED Bulb Material: Polycarbonate, Alu Sheet, Plastic Adex Model no-AD MSB 09W Asha Motion Sensor LED Bulb Energy+ EPSL-49001 Gloria- GLMB 2813. 7W or equivalent.					
						
			1,003.00	1003	1000	1000
6.5.3.4	Motion Sensor Material: Aluminium alloy Glass Gloria- GLFL 989 Energy+ EPSL-49002 Cosmo Cat No. BDTCL-LSL-07 Adex-AD MSFL-50 Asha Cat No. ACS-LFL 2182 MS or equivalent.					
						
				0	0	0
6.5.3.4.1	30W	Each	4,521.00	4521	4519	4519
6.5.3.4.2	50W	Each	5,599.00	5599	5597	5597

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
6.5.3.5	Supply & fixing of motion sensor device for light control having the following features : Detects motion and automatically switches the light ON, tuning it OFF again after a time adjustable from 10 second to 30 minutes as per . Sensing Technology : Passive infrared (PIR) Max. Voltage : 110 - 240 V/AC Mechanical life : (15,00,000 ~ 20,00,000) times Coverage : For wall mounted - 240 degree, For ceiling mounted-360 degree Input voltage : 110 -240 V/AC Power frequency : 50 Hz. Ambient light : < 20 LUX Detection distance : 5m - 6m Detection area with adjustable 5m - 6m detection range. Working temperature : -200~ + 40°C Detection motion speed : 0.6 ~ 1.5 m/s Auto ON/OFF selections. On time : Instant. Light OFF times : Adjustable from 10 seconds to 30 minutes. Suitable for LED lamp loads : Incandescent - 500 W, LED / CFL - 250 W Environment : IP 54 rain tight rated -20°C to 50°C			0	0	0	
6.5.3.5.1	Concealed type Gloria- GMSL 224 Energy+ EPSL-49003 Cosmo cat no-BDTCL-LSL-02 Asha Cat no-ACS LPL-1474 MS Device or equivalent.		Each	2,989.00	2989	2987	2987

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.5.3.5.2	Surface type : Gloria- GMSL 557 Energy+ EPSL-49004 Cosmo cat no-BDTCL-LSL-03 Asha Cat no-ACS LPL-1472 MS Device or equivalent.	Each	3,125.00	3125	3122	3122
6.5.3.6	Gloria- GMSL 223 Energy+ EPSL-49005 Adex Model no-AD OCC LRM107 Asha Cat No. ACS-LPL 1479 MS Device or equivalent.	Each	3,329.00	3329	3327	3327
6.5.3.7	Motion Sensor Device Gloria- GMSL 226, T-8 22W Sensor Energy+ EPSL-49006 and of following model and catalogue number of Adex or equivalent. Adex Model no-AD MST 09W840 Adex Model no-AD MST 09W865 Adex Model no-AD MST 18W840 Adex Model no-AD MST 18W865 Adex Model no-AD MST 22W840 Adex Model no-AD MST 22W865	Each	1,343.00	1343	1340	1340
				0	0	0
				0	0	0
				0	0	0
				0	0	0
				0	0	0
				0	0	0
				0	0	0
6.5.4	<u>BATTEN LIGHT FITINGS</u> Providing & fixing the Batten light fitting consisting of 100 mm (approximate 4") dia Aluminium shade, brass holder, earth terminal, necessary wiring with 2 x 0.4 sq.mm stranded PVC insulated flexible FRcable etc. complete suitable for use LED (thread / pin type) (except lamp).			0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	The fittings shall be suitable for use of LED lamp and complete sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty). Batten light fittings of GLORIA, ENERGY+, ASHA, OSRAM etc. or equivalent.	Each	184.00	184	183	183
6.6	<u>TUBE LIGHT FITTINGS</u>			0	0	0
6.6.1	Providing & fixing the 4' x 40 watt tube light fitting with superior quality electronic driver of one year guarantee, holder, necessary wiring with 2 X 0.4 sq. mm PVC insulated (stranded) flexible FR wire, earth terminal etc. (except lamp). The fittings shall be suitable for use of LED lamp and complete sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty)			0	0	0
6.6.1.1	Light source 20W LED T-8 tube Material: MS Sheet L-1235mm B-50mm P-40mm Gloria cat no-GTF(LED)751x1x20W Energy + EPIL-43001 Cosmo cat no-BDTCL-TLF-02 Asha Cat no-ACS -335x1x40W Crescent-CTLS-7x1x40 Watt or equivalent	Each	662.00	662	660	660



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.6.1.2	Light source 20W T-8 LED tube Material: MS Sheet, Design Acrylic (thick-2.5mm) L-1240mm B-60mm H-106mm Gloria cat no-GTF(LED)755x1x20W Energy + EPIL-43002 Cosmo cat no-BDTCL-TLF-03 Asha Cat No. ACS-TLS 317x1x40W Crescent-CTLS-68x1x40 Watt or equivalent	Each	1,020.00	1021	1017	1017
6.6.1.3	Light source 20W T-8 LED tube Material: MS Sheet, Aluminium reflector, L-1200mm B-175mm H-80mm Gloria cat no- GTF(LED)764x2x20W Energy + EPIL-43005 Cosmo Cat no-BDTCL-TLF-04 Asha Cat No. ACS-TLS 342x2x40W Crescent-CTLS-59x2x40 Watt or equivalent	Each	2,251.00	2251	2249	2249
6.6.1.4	Light source 10W LED T-8 tube Material: MS Sheet, Aluminium reflector, L-600*600mm H-85mm Gloria cat no- GTF(LED)-851x4x10W Energy+EPIL-43007 Cosmo Cat no-BDTCL-TLF-05 Asha Cat No. ACS-TLS 356x4x20W Crescent-CTLS-96x4x20 Watt or equivalent	Each	2,610.00	2610	2608	2608



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.6.1.5	Light source 20W LED T-8 tube Material: MS Sheet, PC Cover & Plastic Grill L-1340mm B-104mm H-55mm Gloria cat no-GTF(LED)892x 1x 20 w Energy + EPIL-4305 Cosmo Cat no-BDTCL-TLF-06 Asha Cat No. ACS-TLS 307x1x40W Crescent-CTLS-225x1x40 Watt or equivalent	Each	1,854.00	1854	1851	1851
6.6.1.6	Light source 20W LED T-8 tube Material: MS Sheet, Aluminium reflector, L-1200mm B-600mm H-80mm Gloria cat no-GTF(LED)851x 4x 20 W Energy + EPIL 43006 Cosmo Cat no-BDTCL-TLF-8 Asha Cat No. ACS-TLS 338 Crescent-CTLS-59x4x40 Watt or equivalent	Each	3,165.00	3165	3162	3162
6.6.1.7	Light source 10W LED T-8 tube Material: MS Sheet, Aluminium reflector, L-600*600mm H-100mm Gloria cat no-GTF(LED)920x 4x 10 W Energy+EPIL-43008 Cosmo Cat no-BDTCL-TLF-09 Asha Cat No. ACS-TLS 530 Crescent-CTLS-226x4x18/23 Watt or equivalent	Each	2,913.00	2913	2911	2911



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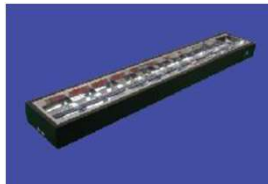
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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.6.1.8	Light source 20W LED T-8 tube Material: MS Sheet, Alu Sheet L-1582mm B-80mm H-85 Gloria cat no-GTF-875x 1x 20 W Energy+EPIL-43004 Cosmo Cat no-BDTCL-TLF-10 Asha Cat no-ACS -TLS-1199 Crescent-CTLS-94x2x40 Watt or equivalent	Each	1,425.00	1425	1422	1422
6.6.1.9	Light source T-8 LED tube Material: MS Sheet Gloria cat no- GTF (LED)-888x1x20 W Energy+EPTL-1025 Asha Cat No-ACS-LTLS 353x1x20W (4')LED Crescent-CTLS-7x1x40 Watt or equivalent.	Each	662.00	662	660	660
6.6.1.10	Light source T-8 LED tube Material: MS Sheet Gloria cat no- GTF (LED)-973x2x20 W Energy+EPTL-43001 Asha Cat No. ACS-TLS 362x2x20W (4') LED or equivalent	Each	662.00	662	660	660
6.6.1.11	Light source 20W LED T-8 tube Material: SS Sheet , MS Sheet L-1200mm B-182mm H-80mm Gloria cat no- GTF (LED)-887x2x20 w Energy+EPTL-1031 Asha Cat No. ACS-TLS 325x2x20W (4') LED Crescent-CTLS-8x2x40W or equivalent	Each	946.00	946	943	943

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
6.6.1.12	Material: MS Sheet, Aluminium reflector, L-1210 mm B-100 mm, H-90mm Gloria cat no- GTF (LED)-947x1x18 W T-5 Energy+EPTL-1032 Asha Cat No. ACS-TLS 1381x1x20W (4') LED Crescent-CTLS -197×1×40 W or equivalent.		Each	1,797.00	1797	1794	1794
6.6.1.13	Material: MS Sheet, Aluminium reflector, L-1210 mm B-195 mm, H-70mm Gloria cat no- GTF (LED)-945x2x18 W T-5 Energy+EPTL-1033 Asha Cat No. ACS-TLS 1379x1x20W (4') LED Crescent-CTLS-5041-40 W SURF or equivalent.		Each	1,911.00	1911	1908	1908
6.6.1.14	Material: MS Sheet, Aluminium reflector L-1213 mm B-175 mm, H-100mm Gloria cat no- GTF (LED)-807x1x20 w Energy+EPTL-1034 Asha Cat ACS-TLS 339x1x20W (4') LED Crescent-CTLS-5035-40 W SURF or equivalent.		Each	1,911.00	1911	1908	1908

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.6.1.15	Material: MS Sheet, Opel/ Design acrylic, Alu sheet L-600 mm B-600 mm, H-85mm Gloria cat no- GTF (LED)-936x4x10 w Energy+EPTL-3017 Adex model no- AD PLS 865 (LED)-936x4x10W Asha Cat . ACS-TLS 391x4x12-15W (2'x2') 4x15W LED Crescent-CCPL- SQ 2075 SURF or equivalent	Each	2,932.00	2932	2929	2929
6.6.1.16	Material: MS sheet, Aluminium reflector L-1213 mm B-300 mm, H-80mm Gloria cat no- GTF (LED)-805x2x20 w Energy+EPLS-3018 Asha Cat ACS-TLS 339x2x20W (4') LED Crescent-CTLS - 5027 or equivalent	Each	3,046.00	3045	3043	3043
6.6.1.17	Light source 2x5W LED Bulb Material: MS Sheet, Aluminium alloy Aluminium reflector D-300*300mm H-85mm Energy+EPLS-3019 or equivalent. Asha Cat No. ACS-TLS 314x2x12-15W (1'x1') 2x15W LED or equivalent	Each	2,705.00	2705	2703	2703
6.6.1.18	Material: MS sheet Aluminium alloy Aluminium reflector L-612*612mm H-85mm Asha Cat No-ACS-TLS 357x4x10W (2'x2') LED Crescent-CTLS 5024 or equivalent.	Each	2,819.00	2818 0	2816 0	2816 0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.6.2	<u>TUBE & PANEL LIGHT FITTINGS (LED)</u> Supply & fixing LED tube & panel light fittings of following specifications: Luminous efficacy: 100 lm/W(minimum) Power Factor: minimum 0.95 Colour Rendering Index(Ra) : i) For Residential building $Ra \geq 80$ ii) For office and other types of buildings $70 \leq Ra < 85$ Driver : MEANWELL/OSRAM / ENERGY+ / SIGNIFY(PHILIPS) or equivalent IEC standard, LED chips :EPISTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Colour temperature : 3500K-6500K (Warm-White) Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
				0	0	0
6.6.2.1	Material: Aluminium alloy ABS Plastic GLORIA cat No- GTF (LED). 774 Energy+EPTL-1023 Cosmo Cat no-BDTCL-LE-xTS-01 Adex -AD BL 840 Asha Cat no-ACS -LTLS-1635 Megaman-MXL2027 or equivalent			0	0	0
6.6.2.1.1	2' x 9 W	Each	1,230.00	1229	1227	1227
6.6.2.1.2	2' x 18 W	Each	1,160.00	1160	1157	1157
6.6.2.1.3	4' x 18 W	Each	1,457.00	1456	1454	1454
6.6.2.1.4	4' x 36 W	Each	1,665.00	1665	1662	1662



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.6.2.2	Square panel Material: Aluminium alloy Acrylic Gloria Cat no-CPL-703 Energy+EPLLED-2001/2002 Cosmo Cat no-BDTCL-LPL-01 Asha Cat no-ACS-LTLS-1651 Adex Cat no-ADPLS-36 W 840 Megaman-MQL1030 Walton: WLED-PL-ECO Pasha Cat No- PE-606060/48W or equivalent			0	0	0
6.6.2.2.1	36 W	Each	3,178.00	3178	3176	3176
6.6.2.2.2	48 W	Each	3,329.00	3329	3327	3327
				0	0	0
6.6.2.3	Rectangular panel Material: Aluminium alloy Acrylic Gloria Cat no-CPL-702 ENERGY + model no - EPPLLED - 2007 Cosmo Cat no-BDTCL-LPL-02 Adex model no- AD PLR 865 Asha Cat no-ACS-LTLS-1653 or equivalent					
6.6.2.3.1	Size : 300 mm x 600 mm ; 24 W	Each	2,285.00	2285	2283	2283
6.6.2.3.2	Size : 150 mm x 1200 mm , 36W	Each	3,077.00	3077	3075	3075
6.6.2.3.3	Size : 300 mm x 1200 mm ; 40 W	Each	3,493.00	3493	3490	3490
6.6.2.3.4	Size : 600 mm x 1200 mm ; 48 W	Each	5,486.00	5486	5483	5483
				0	0	0

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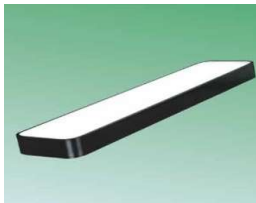
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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.6.2.4	Light source 10W LED tube Material: MS sheet Aluminium alloy Aluminium reflector L-612*612mm H-95mm Energy+EPLS-3008 or equivalent Adex model no- AD PLS 865 Asha Cat No. ACS-TLS 1606x2x10W (2'x2') I F D	Each	3,046.00	3045	3043	3043
6.6.2.5	Material: Aluminium alloy ABS Plastic, Acrylic 2x24 watt Energy+EPTL-1029 Adex model no- AD BLA 830 Asha Cat No. ACS-LTLS 1668x2x24W Crescent-CTLS -X 08 or equivalent .	Each	1,457.00	1456	1454	1454
6.6.2.6	Material: Aluminium alloy ABS Plastic, Acrylic 2x20 watt Gloria cat no- GTF (LED)-777 Cosmo Cat no-BDTCL-LEXTS-06 Adex model no- AD BLC 865 Asha Cat No. ACS-LTLS 1630 Crescent-CTLS- X 06 or equivalent.	Each	1,513.00	1513	1511	1511
6.6.2.7	Light source 20W LED T-8 tube Material: MS Sheet, PC/ABS Cover & Grill L-1340mm B-165mm H-55mm Gloria cat no- GTF (LED)-892x2x20 w Energy+EPLS-43003 Asha Cat No. ACS-TLS 307x2x18W (4') Crescent-CTLS 225 or equivalent.	Each	2,251.00	2251	2249	2249

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
6.6.2.8	Light source 20W LED T-5 tube Material: MS Sheet, Aluminium reflector, Alu alloy L-1210mm B-150mm H-90mm Gloria cat no- GTF (LED)-946 1x18 watt Energy+EPTL-1035 Asha Cat No. ACS-TLS 1378x1x18W (4') LED Crescent-CTLS- 108×1×40 or equivalent		Each	3,386.00	3386	3383	3383
6.6.2.9	Light source 20W LED T-5 tube Material: MS Sheet, Aluminium reflector, Alu alloy L-1210mm B-100mm H-90mm Gloria cat no- GTF (LED)-947x1x20W Energy+EPTL-1036 Asha Cat No. ACS-TLS 324x1x20W (4') LED Crescent-CTLS 5009 T5 or equivalent		Each	2,024.00	2024	2022	2022
6.6.2.10	TUBE & PANEL LIGHT FITTINGS (LED) Material: Aluminium alloy Acrylic Gloria cat no- GSDL 566 Energy+EPTL-1037 Asha Cat No. ACS-LTLS 1610x2x20W (4') LED Crescent-CTLS-5013 or equivalent						
6.6.2.10.1	2'x18W	Each	3,080.00	3079	3077	3077	
6.6.2.10.2	4'x36W	Each	5,316.00	5315	5313	5313	
				0	0	0	
6.7	<u>GARDEN & GATE LIGHT FITTINGS (EXCEPT LAMP)</u>			0	0	0	

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.7.1	Providing & fixing the garden / gate light fitting with frosted fancy glass cover, brass holder, earth terminal, necessary wiring with 2 x 0.4 sq.mm stranded PVC insulated flexible FR cable ,and ingress protection (IP 55) and polished brass base suitable for fitting with 38.1 mm. dia G.I pipe post. The fittings shall be suitable for use of LED lamp and complete sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).					
6.7.1.1	With Dia-305 mm, Height-615mm Material: Cast Aluminium, MS Sheet and Glass Cast Aluminium thickness: minimum 5mm Gloria Cat no-GGL-160 Energy+EPGL-16010 Cosmo Cat no-BDTCL-GDL-01 Asha cat no-ACS GL-2948-NET Crescent-CGL-49 (N) or similar product of SUNKO, ANNYESHA, FLOS or equivalent			0	0	0
		Each	2,169.00	2170	2166	2166

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.7.1.2	With Dia-205 mm, Height-1120 mm Material: Cast Aluminium, Acrylic, MS Pipe Cast Aluminium thickness: minimum 5mm MS Pipe dia: 2.5" & thickness: minimum 2 mm Gloria Cat no-GBL-271 Energy+EPGL-2428 Cosmo Cat no-BDTCL-GDL-02 Asha cat no-ACS BL-2705 Crescent-CGL-27 or similar product of SUNKO, ANNYESHA, FLOS or equivalent	Each	4,918.00	4918	4916	4916
6.7.1.3	With Dia-235 mm, Height-900 mm Material: Cast Aluminium, Acrylic, MS Pipe Cast Aluminium thickness: minimum 5mm MS Pipe dia: 2.5" & thickness: minimum 2 mm Gloria Cat no-GBL-263 Energy+EPGL-2429 Cosmo Cat no-BDTCL-GDL-03 Asha cat no-ACS BL-2954 Crescent-CGL-36 or similar product of SUNKO, ANNYESHA, FLOS or equivalent	Each	3,273.00	3272	3270	3270



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.7.1.4	With Dia-293 mm, Height-940mm Material: Cast Aluminium, Acrylic, MS Pipe Cast Aluminium thickness: minimum 5mm MS Pipe dia: 2.5" & thickness: minimum 2 mm Gloria Cat no-GBL-284 Energy+EPGL-16034 Cosmo Cat no-BDTCL-GDL-03 Asha cat no-ACS BL-9307 Crescent-CGL-74 or similar product of SUNKO, ANNYESHA, FLOS or equivalent	Each	3,273.00	3272	3270	3270
6.7.1.5	With Dia-900 mm, Height-2110mm Material: Cast Aluminium, Acrylic, MS Pipe MS Pipe dia: 2" & thickness: minimum 2 mm Base Height: 10" , Base made of Cast Aluminium of minimum thickness of 10 mm Gloria Cat no-GRL-305-2 Energy+EPGL-2430 Cosmo Cat no-BDTCL-GDPL-01 Asha Cat No. ACS-GL 9340 (2) GLOBE Crescent-CGL-90 (2) or similar product of SUNKO, ANNYESHA, FLOS or equivalent.	Each	7,529.00	7528	7526	7526



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.7.1.6	With Dia-330 mm, Height-420mm Material: Cast Aluminium, Acrylic Globe, MS Sheet. Base made of Cast Aluminium of minimum thickness of 5 mm Gloria Cat no-GGL-176 Energy+EPGL-16017 Cosmo Cat no-BDTCL-GDL-05 Asha cat no-ACS GL-977 Crescent-CG-100 or similar product of SUNKO, ANNYESHA, FLOS or equivalent.	Each	2,484.00	2484	2482	2482
6.7.1.7	With Dia-520 mm, Height-2110 mm Material: Cast Aluminium, MS Pipe MS Pipe dia: 2" & thickness: minimum 2 mm Base Height: 10" , Base made of Cast Aluminium of minimum thickness of 10 mm Gloria Cat no-GRL-307 Energy+EPGL-2431 Cosmo Cat no-BDTCL-GDPL-02 Asha cat no-ACS GL-1116 Crescent-CGL-126 (1) or similar product of SUNKO, ANNYESHA, FLOS or equivalent.	Each	10,264.00	10264	10261	10261



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.7.1.8	With Dia-625 mm, Height-2400mm Material: Cast Aluminium, MS Pipe MS Pipe dia: 2" & thickness: minimum 2 mm Base Height: 10" & ball 2" , Base made of Cast Aluminium of minimum thickness of 10 mm Top made of Cast Aluminium of minimum thickness of 5 mm GLORIA cat No. GRL-303 (2) Energy+EPGL-2432 Cosmo Cat no-BDTCL-GDPL-03 Asha cat no-ACS GL-9341 (2) Crescent-CGL-114 (2) or similar product of SUNKO, ANNYESHA, FLOS or equivalent. 	Each	10,877.00	10876	10874	10874
6.7.2	<u>GARDEN & GATE LIGHT FITTINGS (LED)</u> Supply & fixing LED garden & gate light fittings of following specifications: Luminous efficacy: 80 lm/w(minimum), Power Factor: minimum 0.95			0	0	0
				0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Colour Rendering Index(Ra) : i) For Residential building Ra≥80 ii) For office and other types of buildings 70≤Ra<85 Driver: Should be of IEC standard such as MEANWELL/OSRAM/ENERGY+/SIGNIFY(P HILIPS) or equivalent LED chips :EPISTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Colour temperature : 3500K-6500K (Warm-White) Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).				0 0	0 0
6.7.2.1	Watt: 15W LED bulb, Voltage: AC165-265V, With Dia: 220 mm & Height :625 mm Material: Aluminium alloy & MS sheet painted with epoxy powder paint & glass Cast Aluminium thickness : minimum 5 mm Gloria cat no- GGL (LED) -171Energy+ EPGL-16016 Cosmo BDTCL-GDL-05 Asha Cat No. ACS-GL 901 15W Crescent-CGL-78 or similar product of SUNKO, ANNYESHA, FLOS or equivalent.		Each	2,075.00	2073	2070
						2070

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.7.2.2	Watt: 15W LED bulb, Voltage: AC165-265V, with dia : 230 mm and height :610 mm Material: Aluminium alloy & MS sheet painted with epoxy powder paint & glass Cast Aluminium thickness : minimum 5 mm Gloria cat no- GGL (LED) -375 Energy+EPGL-16035 Cosmo BDTCL-GDL-01 Asha Cat No. ACS-GL 1706 Crescent-CGL-86 or similar product of SUNKO, ANNYESHA, FLOS or equivalent	Each	1,167.00	1165	1161	1161
6.7.2.3	Watt: 15W LED bulb, Voltage: AC165-265V, With Dia: 220 mm & Height :450 mm Material: Aluminium alloy & MS sheet painted with epoxy powder paint & glass Cast Aluminium thickness : minimum 3 mm Gloria cat no- GGL (LED) -370 Energy+EPGL-16036 Cosmo BDTCL-GDL-10 Asha Cat No. ACS-GL 2727 Crescent-CGL-3010-BLK or similar product of SUNKO, ANNYESHA, FLOS or equivalent	Each	2,903.00	2901	2898	2898



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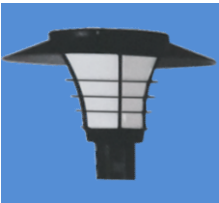
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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.7.2.4	Watt: 15W LED bulb, Voltage: AC165-265V, With Dia: 220 mm & Height :460 mm Material: Aluminium alloy & MS sheet painted with epoxy powder paint & glass Cast Aluminium thickness : minimum 4 mm Gloria cat no- GGL (LED) -392 Energy+EPGL-16037 Cosmo BDTCL-GDL-11 Asha Cat No. ACS-GL 2726 or similar product of SUNKO, ANNYESHA, FLOS or equivalent 	Each	2,075.00	2073	2070	2070
6.7.2.5	Dia-300mm, Height-350mm, Watt: 15W LED bulb, Voltage: AC165-265V, Material: Cast Aluminium, Brass & glass Cast Aluminium thickness : minimum 4 mm Gloria cat no- GGL-399 Energy+EPGL-16038 Cosmo Cat No. BDTCL- GDL-08 Asha Cat No. ACS-GL 1705 Crescent-CGL -3034 or similar product of SUNKO, ANNYESHA, FLOS or equivalent 	Each	3,777.00	3776	3772	3772

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.7.2.6	Watt: 15W LED bulb, Voltage: AC165-265V, With Dia: 470 mm & Height :300 mm Material: Aluminium alloy, Brass Pipe, MS sheet painted with epoxy powder paint & acrylic Cast Aluminium thickness : minimum 5 mm Gloria cat no- GGL-307 Energy+EPGL-16039 Cosmo Cat No. BDTCL- GDL-12 Asha Cat No. ACS-GL 2740 Crescent-CGL-2017 BLK or similar product of SUNKO, ANNYESHA, FLOS or equivalent 	Each	3,493.00	3492	3488	3488
6.7.2.7	Watt: 15W LED bulb, Voltage: AC165-265V, With Dia: 315 mm & Height :615 mm Material: Brass Alloy of minimum thickness : 3 mm and Brass Sheet of minimum thickness : 1.5 mm Aluminium alloy & MS sheet painted with epoxy powder paint & glass Gloria cat no- GGL-159 (B) Energy+EPGL-16040 Asha-ACS-GL-2392 (B) Crescent-CGL 14 LED-15W or similar product of SUNKO, ANNYESHA, FLOS or equivalent 	Each	2,075.00	2073	2070	2070

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.7.2.8	Watt: 15W LED bulb, Voltage: AC165-265V With Dia: 210 mm & Height :475 mm Material: Aluminium alloy, MS sheet painted with epoxy powder paint & acrylic Cast Aluminium thickness : minimum 5 mm Gloria cat no- GGL-307 Energy+EPGL-16041 Asha-ACS-GL-9307 Crescent-CGL -74 LED: 15W or similar product of SUNKO, ANNYESHA, FLOS or equivalent	 Each	3,209.00	3209	3204	3204
6.7.2.9	Watt: 7W , Voltage: AC85-265V, Material: Aluminium alloy + Acrylic With Dia: 95 mm & Height :450 mm (Acrylic Height: 95 mm minimum) Cast Aluminium thickness : minimum 3 mm Gloria cat no- GDDL-316 Energy+EPGL-24017 Cosmo-BDTCL-LBL-01 Asha ACS-LGL-2723 or similar product of SUNKO, ANNYESHA, FLOS or equivalent	 Each	2,869.00	2867	2864	2864
6.7.2.10	Watt: 7W , Voltage: AC85-265V, Material: Aluminium alloy, Acrylic, SS Pipe With Dia: 110 mm & Height :600 mm Cast Aluminium thickness : minimum 3 mm Gloria-GDDL-312 (S) 6W Energy+EPGL-16009 Asha ACS-BL-902 Cast Aluminium Crescent-CGL-4120 B WH-S or equivalent .	 Each	2,869.00	2867	2864	2864

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.7.2.11	Watt: 12W LED bulb, Voltage: AC165-265V, Material: Aluminium alloy painted with epoxy powder paint. H-495mm, Dia-240mm Cast Aluminium thickness : minimum 5 mm Gloria cat no- GGD-339 Energy+EPGL-24033 Asha ACS-LGL-2731 or similar product of SUNKO, ANNYESHA, FLOS or equivalent 	Each	6,558.00	6556	6553	6553
6.7.2.12	Watt: 12W LED bulb, Voltage: AC165-265V, Material: Aluminium alloy painted with epoxy powder paint, Acrylic. H-800mm, Dia-210mm Cast Aluminium thickness : minimum 6 mm Gloria cat no- GGD-334 Energy+EPGL-24034 Cosmo BDTCL-LBL-11 Asha ACS-LGL-2732 or similar product of SUNKO, ANNYESHA, FLOS or equivalent 	Each	8,828.00	8826	8822	8822

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
6.7.2.13	Watt: 15W LED bulb, Voltage: AC165-265V, Material: Aluminium alloy & MS sheet painted with epoxy powder paint, Glass. Height-750mm, Shade Dia:220 mm MS Sheet Dimension: 100mm x 100 mm with minimum 2 mm thickness. Cast Aluminium thickness : minimum 4 mm Gloria cat no- GRL (LED) -438-392 Energy+EPGL-24035 Cosmo BDTCL-LBL-10 Asha ACS-LGL-2737 Crescent-CGL-4365 BLK or similar product of SUNKO, ANNYESHA, FLOS or equivalent		Each	7,693.00	7692	7687	7687
6.7.2.14	Watt: 2x15W LED bulb, Voltage: AC165-265V, Material: Aluminium alloy, MS pipe & sheet painted with epoxy powder paint and glass. Height:3000mm , Base Height with ball : minimum 22" Overall Diameter (including 2 shades) :30" MS pipe Dia: 2.5" & 2" & Thickness: minimum 2 mm Cast Aluminium thickness on shade: minimum 3 mm & on base: minimum 10 mm Gloria cat no- GRL (LED) -440PS-370 (M)(2) Energy+EPGL-24025 Cosmo Cat. No: BDTCL- GDPL- 08 Asha ACS-GL-871 (2) Crescent-CGL-2005-2 BLK or similar product of SUNKO, ANNYESHA,FLOS or equivalent		Each	19,043.00	19041	19038	19038

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
6.7.2.15	Watt: 2x15W LED bulb, Voltage: AC165-265V, Material: Aluminium alloy, MS pipe & sheet painted with epoxy powder paint and glass. Height:3000mm , Base Height with ball : minimum 22" Overall Diameter (including 2 shades) :30" MS pipe Dia: 2.5" & 2" & Thickness: minimum 2 mm Cast Aluminium thickness on shade: minimum 5 mm & on base: minimum 10 mm Gloria cat no- GRL (LED) -440P-371(B)(2) Energy+EPGL-24036 Cosmo Cat. No: BDTCL- GDPL- 07 Crescent-CGL-1090-2 BLK or similar product of SUNKO, ANNYESHA, FLOS or equivalent		Each	16,069.00	16068	16063	16063

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
6.7.2.16	Watt: 2x15W LED bulb, Voltage: AC165-265V, Material: Aluminium alloy, MS pipe & sheet painted with epoxy powder paint and glass. Height:3000mm , Base Height with ball : minimum 22" Overall Diameter (including 2 shades) :30" MS pipe Dia: 2.5" & 2" & Thickness: minimum 2 mm Cast Aluminium thickness on shade: minimum 5 mm & on base: minimum 10 mm Gloria Cat. No: GRL(LED).441P-391 (2) 2x15W Energy+EPGL-24037 Cosmo Cat. No: BDTCL- GDPL- 06(2) Asha ACS-GL-9342 (2) Crescent-CGL-2015-2 BLK or equivalent.		Each	19,043.00	19041	19038	19038

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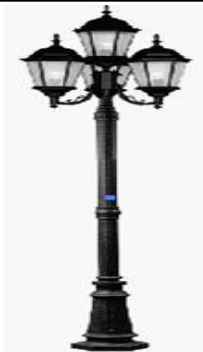
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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
6.7.2.17	Watt: 3x15W LED bulb, Voltage: AC165-265V, Material: Aluminium alloy, MS pipe & sheet painted with epoxy powder paint and glass. Height:3000mm , Base Height with ball : minimum 22" Overall Diameter (including 3 shades) :26" MS pipe Dia: 2.5" & 2" & Thickness: minimum 2 mm Cast Aluminium thickness on shade: minimum 3 mm & on base: minimum 10 mm Gloria cat no- GRL (LED) -440DS-375 (3) Energy+ EPGL-24038 Cosmo BDTCL-GDPL-12 Crescent-CGL-2075-3 BLK Asha ACS-GL-934 (3) 3x15W or equivalent.		Each	20,819.00	20818	20814	20814

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
6.7.2.18	Watt: 4x15W LED bulb, Voltage: AC165-265V, Material: Aluminium alloy, MS pipe & sheet painted with epoxy powder paint and glass. Height:3000mm , Base Height with ball : minimum 22" Overall Diameter (including 4 shades) :30" MS pipe Dia: 2.5" & 2" & Thickness: minimum 2 mm Cast Aluminium thickness on shade: minimum 3 mm & on base: minimum 10 mm Gloria Cat. No: GRL(LED).441DS-375 (4) 4x15W Energy+ EPGL-24022 Cosmo BDTCL-GDPL-13 Asha Cat-ACS-GL-937 (4) Crescent-CGL-2030-3 BLK or similar product of SUNKO, ANNYESHA, FLOS or equivalent		Each	25,853.00	25850	25847	25847

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.7.2.19	Watt: 5x15W LED bulb, Voltage: AC165-265V, Material: Aluminium alloy, MS pipe & sheet painted with epoxy powder paint and glass. Height: 2500mm, Base Height with ball : minimum 22" Overall Diameter (including 5 shades) : 40" MS pipe Dia: 2.5" & Thickness: minimum 2 mm Cast Aluminium thickness on shade: minimum 5 mm & on base: minimum 10 mm Gloria cat no- GRL-298 (5) Energy+ EPGL-2439 Asha Cat-ACS-GL-839 (5) Crescent-CGL-2130-5 BLK or similar product of SUNKO, ANNYESHA, FLOS or equivalent	Each	32,662.00	32660	32657	32657
6.7.2.20	Watt: 18W, Voltage: AC85-265V, Material: Aluminium alloy + polycarbonate + MS Pipe Height: 750mm, Dia: 170 mm MS Pipe Dia: 2" & Thickness: 2 mm Cast Aluminium thickness : minimum 5 mm Gloria Cat. No: GGD.L367 ENERGY+ model no - EPGL 23052 Cosmo Cat. No: BDTCL- LBL-14 Asha Cat No. ACS-LGL 2076 Crescent-CGL -27 or similar product of SUNKO, ANNYESHA, FLOS or equivalent	Each	5,592.00	5591	5587	5587



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
6.7.2.21	Material: Cast Aluminium , Acrylic, MS Sheet Dimension:100mm x 100mm, Height:750mm Cast Aluminium thickness : minimum 5 mm GLORIA cat. no. - GGD.L. 317, 7W ENERGY+ model no - EPGL 24040 Cosmo Cat no-BDTCL-LBL-04 Asha cat no-ACS LGL-2797 or similar product of SUNKO, ANNYESHA, FLOS or equivalent.		Each	8,033.00	8032	8028	8028
6.7.2.22	Material: Cast Aluminium , MS Sheet Dimension:160mm x 50mm, Height:750mm Cast Aluminium thickness :minimum 3 mm GLORIA cat No. GGD.L. 318, 5W ENERGY+ model no - EPGL 24041 Cosmo Cat no-BDTCL-LBL-04 Asha cat no-ACS LGL-2764 or similar product of SUNKO, ANNYESHA, FLOS or equivalent		Each	8,575.00	8574	8570	8570
6.7.2.23	Material: Cast Aluminium , MS Sheet Dia:55 mm , Height:225mm Gloria Cat no- GGD.L. 353, 5W ENERGY+ model no - EPGL 29018 Cosmo Cat no-BDTCL-LGDL-02 Asha cat no-ACS LGL-2798 or similar product of SUNKO, ANNYESHA, FLOS or equivalent		Each	1,570.00	1570	1567	1567

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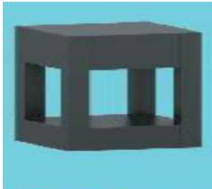
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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.7.2.24	Material: Cast Aluminium , Crystal Dia:55 mm , Height:225mm Gloria Cat no- GGDL. 345, 5W ENERGY + model no- EPGL - 24042 Cosmo Cat no-BDTCL-LGDL-01 Asha cat no-ACS LGL-2799 or similar product of SUNKO, ANNYESHA, FLOS or equivalent	Each	2,415.00	2414	2410	2410
6.7.2.25	Material: Cast Aluminium , Acrylic Dia: 170 mm, Height:750mm Cast Aluminium thickness :minimum 3 mm Gloria cat no- GGDL-352 18 w ENERGY+ model no - EPGL 24043 Cosmo-BDTCL-LBL-02 Asha cat no-ACS LGL-2745 or similar product of SUNKO, ANNYESHA, FLOS or equivalent	Each	9,963.00	9961	9958	9958
6.7.2.26	Watt: 15W LED bulb, Voltage: AC165-265V, Material: Aluminium alloy & glass Dia: 260 mm, Height:260 mm Cast Aluminium thickness :minimum 5 mm Gloria cat no- GGDL-365 10 W ENERGY+ model no - EPGL 16043 Asha cat no-ACS LGL-2725 or similar product of SUNKO, ANNYESHA, FLOS or equivalent	Each	4,287.73	4286	4283	4283

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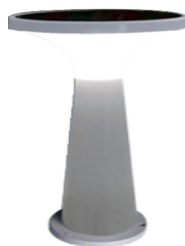
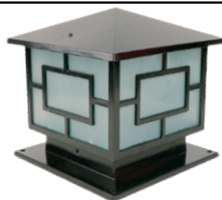
Item No.	Description of Items		Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.7.2.27	Watt: 10W , Voltage: AC85-265V, Material: Aluminium alloy Dia: 200 mm, Height:175mm Cast Aluminium thickness :minimum 5 mm Gloria cat no- GDDL-360 10w ENERGY+ model no - EPGL 16044 Asha cat no-ACS LGL-2724 or similar product of SUNKO, ANNYESHA, FLOS or equivalent		Each	7,692.70	7691	7688	7688
6.7.2.28	Watt: 18W , Voltage: AC85-265V, Material: Aluminium alloy + Seamless polycarbonate Cover Height: 750mm , Dia:170 mm Cast Aluminium thickness of base :minimum 5 mm & body: minimum 3 mm Gloria Cat. No: GDDL.370 ENERGY+ model no - EPGL 24044 Asha cat no-ACS LGL-2756 ADEX AD GL or similar product of SUNKO, ANNYESHA, FLOS or equivalent		Each	9,963.00	9961	9958	9958
6.7.2.29	Material: Aluminium alloy + Seamless polycarbonate Cover Dimension : 100mm x 65 mm Height: 600mm Cast Aluminium thickness :minimum 5 mm Gloria Cat. No: GDDL.373 ENERGY+ model no - EPGL 24045 Cosmo BDTCL-LBL-15 ADEX AD GL Asha cat no-ACS LGL-2760 or similar product of SUNKO, ANNYESHA, FLOS or equivalent		Each	6,251.00	6250	6247	6247

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.7.2.30	Dia-300mm, Height-280mm Material: Aluminium alloy , MS Sheet, Glass MS Sheet thickness :minimum 1.5 mm Gloria-GGL-352 ENERGY+ model no - EPGL 16045 Cosmo Cat No. BDTCL- GDL-09 Asha Cat No. ACS-GL 1708 Crescent-CGL -4045 BLK or similar product of SUNKO, ANNYESHA, FLOS or equivalent	Each	5,479.00	5478	5475	5475
6.7.2.31	Dia-225mm, Height-900mm, Material: Cast Aluminium , Acrylic, GI Pipe Top thickness 3mm, GI Pipe Dia: 75mm, Thickness: 2 mm minimum Cast Aluminium thickness :minimum 5 mm Gloria cat no- GGD-379 ENERGY+ model no - EPGL 24046 Cosmo Cat No. BDTCL- LBL-09 Asha Cat No. ACS-LGL 2715 or similar product of SUNKO, ANNYESHA, FLOS or equivalent					
6.7.2.31.1	5W	Each	9,963.00	9961	9958	9958
6.7.2.31.2	18W	Each	12,233.00	12231	12227	12227



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.7.2.32	Dia-225mm, Height-900 mm, Material: Cast Aluminium , Acrylic, GI Pipe Top thickness 3mm, GI Pipe Dia: 75mm, Thickness: 2 mm minimum Cast Aluminium thickness :minimum 5 mm Gloria cat no- GGDL-381 ENERGY+ model no - EPGL 24047 Cosmo Cat No. BDTCL- LBL-10 Asha Cat No. ACS-LGL 2716 or similar product of SUNKO, ANNYESHA, FLOS or equivalent					
				0	0	0
6.7.2.32.1	5W	Each	7,693.00	7692	7687	7687
6.7.2.32.2	18W	Each	8,487.00	8486	8482	8482
6.7.2.33	Dia-225mm, Height-900mm, Material: Cast Aluminium , Acrylic, GI Pipe Top thickness 3mm, GI Pipe Dia: 75mm, Thickness: 2 mm minimum Cast Aluminium thickness :minimum 5 mm Gloria cat no- GGDL-383, 18W ENERGY+ model no - EPGL 24048 Cosmo Cat No. BDTCL- LBL-12 Asha Cat No. ACS-GL 2765 or similar product of SUNKO, ANNYESHA, FLOS or equivalent					
		Each	6,558.00	6556	6553	6553

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.7.2.34	Dimension: 100mm x 50 mm, Height-1080 mm Material: Cast Aluminium , Acrylic. Cast Aluminium thickness :minimum 5 mm Gloria-GGDL-341 ENERGY+ model no - EPGL 24049 Cosmo Cat No. BDTCL- LBL-13 ADEX AD GL840 Asha Cat No. ACS-GL 2728 or equivalent.	Each	9,963.00	9961	9958	9958
6.7.2.35	Watt: 15W Body: Acrylic and Aluminium Dia: 120 mm , Height: 290 mm Cast Aluminium thickness :minimum 5 mm Gloria-GLOD-1412 ENERGY+ model no - EPGL 23032 Cosmo Cat No. BDTCL- WSL-17 Asha Cat No. ACS-LOD 218 Crescent-CML 1050 or similar product of SUNKO, ANNYESHA, FLOS or equivalent	Each	2,415.00	2414	2410	2410
6.7.2.36	Material: Cast Aluminium, Glass MS Sheet, MS Pipe Dia: 2050 mm, Height:3000 mm MS Pipe Dia: 100 mm , Thickness: 2 mm Cast Aluminium thickness :minimum 6 mm Gloria Cat no: GRL.391(2) ENERGY+ model no - EPGL 24050 Cosmo Cat No. BDTCL- GDPL-05 (02) Asha Cat No. ACS-GL 819 (2) or similar product of SUNKO, ANNYESHA, FLOS or equivalent	Each	21,313.00	21311	21307	21307

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.7.2.37	Watt: 20W , Voltage: AC85-265V, Material: Cast Aluminium + MS Dimension:150 mm x 150 mm, Height:750mm, Cast Aluminium thickness :minimum 5 mm Gloria Cat. No: GGD.L.360 (B) ENERGY+ model no - EPGL 24051 Cosmo Cat. No: BDTCL- LBL-13 Asha Cat No. ACS-LGL 2742 or similar product of SUNKO, ANNYESHA, FLOS or equivalent	Each	8,828.00	8826	8822	8822
6.8	<u>STREET LIGHT FITTINGS</u>			0	0	0
6.8.1	Street Light (Except Lamp) Providing & fixing the water tight street light fitting with clear acrylic sheet semicircular shade, brass holder, earth terminal necessary wiring with 2 x 0.4 sq.mm stranded PVC insulated flexible FR cable and ingress protection (IP 65) & mountable on 38.1 mm (1.5") dia G.I pipe bracket, suitable for LED lamp (except lamp). The fittings shall be suitable for use of LED lamp and complete sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
6.8.1.1	GLORIA cat. no. GRL-703(Net) ENERGY+ model no - EPBL 23036 Cosmo BDTCL-STLF-01 Crescent-CST-1008 (N) Asha cat No-ACS-RL-2984-N or equivalent.					
			1,513.00	1512	1509	1509
6.8.2	<u>STREET LIGHT FITTINGS</u> <u>(SODIUM/MHL)</u>			0	0	0



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Providing & fixing of the street light fitting with high pressure sodium lamp consisting of epoxy powder coated grey colour Aluminium die-casting body, high purity anodized Aluminium reflector, terminal resistant tempered frosted glass cover, high pressure sodium lamp, E-40 / E-27 holder, Ignitor, mfd capacitor, control gear, earth terminal, necessary wiring with 2 x 0.4 sq.mm stranded PVC insulated flexible FR cable & mountable on 38.1 mm (1.5") dia G.I pipe bracket etc. complete. (with lamp) as per sample accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
6.8.2.1	Gloria Cat no: GLST.1217, ENERGY+ model no - EPSTL 23025 Cosmo BDTCL-MSTL-02 Crescent-CST- 1010-150 Asha Cat No. ACS-RL 3747 (CFL) 150W or equivalent.	Each	7,062.00	7061	7057	7057
6.8.2.2	Gloria Cat no: GLST.1212, ENERGY+ model no - EPSTL 18018 Cosmo BDTCL-MSTL-03 Asha Cat No. ACS-RL 3734 (250W) Crescent-CST- 1011-250	Each	3,046.00	3045	3043	3043



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.8.2.3	Gloria Cat. No: GLST.1214, MHL ENERGY + model no- EPSTL - 18002/1 x E40 MHL Cosmo-BDTCL-MSTL-01 Asha Cat No. ACS-LSL 2344 MHL Crescent-CST 2022 or equivalent products of SUNKO/Annyesha/SHWASH/Crescent or equivalent foreign made 400W. 		7,072.00	7072	7070	7070
6.8.3	<u>STREET LIGHT FITTINGS (LED)</u> Supply & fixing LED street light fittings of following specifications: Luminous efficacy: 100lm/w(minimum), Power Factor: minimum 0.95 Colour Rendering Index(Ra) :70≤Ra<85 Driver: Should be of IEC standard such as MEANWELL/OSRAM/ENERGY+/SIGNIFY(PHILIPS) or equivalent. LED chips :EPISTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Colour temperature : 3500K-6500K (Warm-White) Material: Aluminium alloy Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0 0	0 0	0 0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.8.3.1	GLORIA cat No- GLST. 1205 Energy+ EPSTL-18001 Cosmo BDTCL-LSTL-02 Cosmo BDTCL-LSTL-03 Asha Cat No. ACS-LSL 2343 Muspana Cat No MPSL100DL or equivalent products of SUNKO/Annyesha/SHWASH/Crescent or equivalent foreign made			0	0	0
6.8.3.1.1	100 W	Each	9,486.00	9485	9481	9481
6.8.3.1.2	150 W	Each	11,664.00	11663	11659	11659
6.8.3.2	(Daylight sensor) Gloria Cat. No: GLST.1249 Energy+ EPSTL-18008 Asha Cat No. ACS-LSL 2352 Muspana Cat N0 MPSL250W MLD or equivalent SUNKO/ Annyesha/ SHWASH/ Crescent or equivalent foreign made product of 250W	Each	32,662.00	32660	32657	32657
6.8.3.3	Gloria Cat. No: GLST.1224 Energy+ EPSTL-18011 Cosmo Cat No. BDTCL- LSTLSMD-01 Asha Cat No. ACS-LSL 2315 Muspana Cat No MPSL50/100/150/200ML or equivalent products of SUNKO/Annyesha/SHWASH/Crescent or equivalent foreign made			0	0	0
6.8.3.3.1	50W	Each	4,771.00	4770	4766	4766
6.8.3.3.2	100W	Each	9,250.00	9249	9244	9244
6.8.3.3.3	150W	Each	10,529.00	10527	10524	10524
6.8.3.3.4	200W	Each	18,657.00	18655	18651	18651

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.8.3.4	Gloria Cat. No: GLST.1243 Energy+ EPSTL-18012 Cosmo Cat No. BDTCL- LSTLSMD-02 Asha Cat No. ACS-LSL 2313 or equivalent products of SUNKO/Annyesha/SHWASH/Crescent or equivalent foreign made..			0	0	0
6.8.3.4.1	50W	Each	7,738.00	7737	7733	7733
6.8.3.4.2	100W	Each	10,519.00	10518	10514	10514
6.8.3.4.3	150W	Each	13,617.00	13615	13612	13612
6.8.3.4.4	200W	Each	17,317.00	17316	17312	17312
6.8.3.5	Material: Aluminium alloy Square MS pipe, Heat proof glass/acrylic Gloria Cat. No: GRL(LED).471 (2) Energy+ EPSTL-18019 Asha Cat No. ACS-GL 887 (2) 2x30W LED or equivalent.			0	0	0
6.8.3.5.1	Material : MS Pipe of 4 mm thickness Pole: 75mm x 75mm, H-4800mm, Bracket: 75mm x 50mm, 150mm, Shade: 450mm x 350mm, H-150mm	Each	23,015.00	23013	23010	23010
6.8.3.5.2	Material : MS Pipe of 4 mm thickness Pole:100mm x 100mm, H-6000mm, Bracket: 75mm x 50mm,150mm, Shade: 450mm x 350mm, H-150mm	Each	28,122.00	28121	28117	28117
				0	0	0



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Item No.	Description of Items		Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.8.3.6	LED Light Fittings (Double arm) , Material: Steel Pole, Aluminium, Glass Height: 300 cm Dia : Lifespan: 50000 hours Gloria-GRL.408, 2x30W Energy+ EPSTL-18022 Sunko Cat No SES-MSPL 1012 or equivalent of 2*30 Watt.						
			Each	30,392.00	30391	30387	30387
6.8.3.7	Dia : 450 mm, Height : 2400 mm Material : Cast Aluminium , MS Pipe MS Pipe Dia: 62 mm & Thickness :2 mm Cast Aluminium Thickness: minimum 5 mm Gloria-GRL.415, 50W Energy+ EPSTL-18023 Sunko Cat No - SES-MSPL 1014 or equivalent.						
			Each	21,880.00	21878	21874	21874
6.8.3.8	Dia :300mm, Height : 2400 mm Material : Cast Aluminium , MS Pipe MS Pipe Dia: 2.5" & 2 "& Thickness :2 mm Cast Aluminium Thickness of base: minimum 10 mm Gloria-GRL.418 Energy+ EPSTL-18024 Sunko Cat No SES MSPL 1006 or equivalent.						
			Each	25,285.00	25283	25279	25279

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.8.3.9	Dia -60/76/83 mm Height - 300-500 cm Material: Steel pole Aluminium, Glass , Frequency : 50/60 Hz Voltage : 82-265V Lifespan : 50000 hours SunkoCat No SES MSPL 10030 or equivalent 20/30W product with microwave sensor from Energy+, Gloria or similar companies		34,365.00	34363	34359	34359
6.9	<u>FLOOD LIGHT FITTINGS</u>			0	0	0
6.9.1	FLOOD LIGHT FITTINGS (METAL HALIDE) Providing & fixing the Metal halide flood light fitting consisting of black / gray coloured die-cast Aluminium body, housing for control gear, polished Aluminium reflector, 4 mm toughened heatproof glass, universal mounting for ceiling, wall or surface, hinged front glass for in position lamp replacement, cable entry gland, U-shaped bracket for pole mounting, brass holder, ballast (Phillips/ Harmonics /GE), ignitor, capacitor, necessary wiring with FR cable suitable for use with metal halide lamp, earth terminal etc. complete with metal halide lamp (Phillips /Harmonics/GE). Complete sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.9.1.1	Gloria Cat No-GMHL-740x250W MH Cosmo-BDTCL-HL-02 Asha Cat No. ACS-M 40 (METAL) 250W or equivalent.					
		Each	11,457.00	11457	11454	11454
6.9.1.2	Gloria Cat No-GMHL-741x1x400W Cosmo Cat no-BDTCL-HL-03 Asha Cat No. ACS-M 41 (MAT) 400W or equivalent.					
		Each	12,828.00	12828	12825	12825
6.9.2	<u>FLOOD LIGHT FITTINGS (HALOGEN)</u> Providing & fixing the halogen flood light fitting consisting of Aluminium sheet body of min. breadth 410mm & height 300mm, anodized Aluminium reflector, heat proof glass cover, polished holder, earth terminal necessary wiring with FR cable suitable for use with 1500 watt lamp etc. (except lamp). Complete sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
				0	0	0
				0	0	0
6.9.2.1	Gloria Cat No-GLFL 709x1x1500W Cosmo Cat no-BDTCLHL-01 Asha cat No-ACS-M-41- 400-w or equivalent.					
		Each	2,043.00	2043	2040	2040
6.9.3	<u>FLOOD LIGHT FITTINGS (LED)</u>			0	0	0
				0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.9.3.1	Supply & fixing LED flood light fittings of following specifications: Luminous efficacy: 100lm/w(minimum), Power Factor: minimum 0.95 Colour Rendering Index(Ra) :70≤Ra<85 Driver: Should be of IEC standard such as MEANWELL/OSRAM/ENERGY+/SIGNIFY(P HILIPS) or equivalent LED chips :EPISTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Colour temperature : 3500K-6500K (Warm-White) Material: Aluminium alloy Aluminium reflector, Heat proof glass/Polycarbonate Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty). 50 W Gloria Cat no-GLFL-914 Energy+ cat no-EPFDL-17001 -(50W) Cosmo cat no-BDTCL-LFDL-01 Adex-AD FLE 50W830 Asha cat No-ACS-LFL-2155- (50 W) Pasha Cat no PE FLL0005054/50W or equivalent. 	Each	3,745.00	3745	3743	3743

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
6.9.3.2	100 W Gloria Cat no-GLFL-902 Energy+ cat no-EPFDL-17001 (100 W) Cosmo cat no-BDTCL-LFDL-02 Adex-AD FLE 100W830 Asha cat No-ACS-LFL-2155- (100 W) or equivalent.		Each	6,142.00	6142	6139	6139
6.9.3.3	150 W Gloria Cat no-GLFL-905 Energy+ cat no-EPFDL-17001 Cosmo cat no-BDTCL-LFDL-04 Adex-AD FLE 150W865 Asha cat No-ACS-LFL-2156- (150 w) or equivalent.		Each	9,610.00	9609	9607	9607
6.9.3.4	200 W Gloria Cat no-GLFL-911 ENERGY + model no - EPFDL- 17011/ 200 W Cosmo cat no-BDTCL-BFDL-03 Adex-AD FLE 200W865 Asha Cat no-ACS-LFL-2160 (200 watt) Crescent cat no-CFLD-024-200 W or equivalent.		Each	12,239.00	12239	12236	12236
6.9.3.5	400 W Gloria-GLFL-915 ENERGY + model no - EPFDL - 17013 Adex-AD FLP 420W840 Asha Cat No. ACS-LFL 2175 400 W Crescent cat no-CFLD-024-400W or equivalent.		Each	20,014.00	20013	20011	20011

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.9.3.6	Motion Sensor Gloria-GLFL-910(100W/200W) Energy + EPSL-49002 Cosmo Cat No. BDTCL-LSL-07 Asha Cat No. ACS-LFL 2182 MS or equivalent .			0	0	0
6.9.3.6.1	30W	Each	4,521.00	4521	4519	4519
6.9.3.6.2	50W	Each	5,599.00	5599	5597	5597
				0	0	0
6.9.3.7	(PROJECTOR LIGHT) Gloria-GLFL.995 Energy + EPFDL-17015 Adex-AD FLP 865 Asha Cat No. ACS-LFL 2143 or equivalent .			0	0	0
6.9.3.7.1	36W	Each	8,664.00	8664	8661	8661
6.9.3.7.2	210W	Each	21,149.00	21149	21146	21146
6.9.3.7.3	300W	Each	30,796.00	30796	30793	30793
6.9.3.8	Emergency Light Gloria-GLFL-907(rechargeable) Energy + EPES-35011 Cosmo Cat No. BDTCL-ELL-01 Asha Cat No. ACS-LFL 2141 or equivalent.			0	0	0
6.9.3.8.1	20W	Each	5,118.00	5117	5115	5115
6.9.3.8.2	50W	Each	8,664.00	8664	8661	8661
				0	0	0
6.9.4	<u>FLOOD LIGHT FITTINGS (LED NARROW BEAM)</u> (FOR OUTER ILLUMINATION)			0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
	Supply & fixing LED narrow beam flood light fittings of following specifications: Luminous efficacy: 100lm/w(minimum), Power Factor: minimum 0.95 Colour Rendering Index(Ra) :70≤Ra<85 Driver: Should be of IEC standard such as MEANWELL/ OSRAM/ ENERGY+ /SIGNIFY (PHILIPS) or equivalent Ingress Protection:IP 67 LED chips :EPISTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Colour temperature : 3500K-6500K (Warm-White) Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0	
6.9.4.1	Gloria Cat no-GLFL-912, 50W Energy+ cat no-EPFDL-17009 Cosmo cat no-BDTCL-BFDL-01 Asha cat No-ACS-LFL-2157 (50 w) or equivalent.		Each	4,880.00	4881	4878	4878
6.9.4.2	Gloria Cat no-GLFL-913, 100W ENERGY + model no- EPFDL- 17010 /100 W Cosmo cat no-BDTCL-BFDL-02 Asha cat No-ACS-LFL-2158 (100 w) or equivalent.		Each	7,277.00	7276	7274	7274
6.10	<u>WATER TIGHT LIGHT FITTINGS</u>			0	0	0	
6.10.1	<u>WATER TIGHT LIGHT FITTINGS (EXCEPT LAMP)</u>			0	0	0	

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
	Providing & fixing the water tight light fitting of following manufacturers model & catalogue number suitable U-type glass cover (minimum total height of fitting 310mm), G.I wire net guard, brass holder, earth terminal, necessary wiring with 2 x 0.4 sq.mm stranded PVC insulated flexible FR cable etc. complete. suitable for LED lamp (except lamp) as per sample accepted / approved by the Engineer-in-charge (with 2 years warranty).			0 0	0 0	0 0	
6.10.1.1	Material: Aluminium alloy Aluminium Sheet, MS sheet, GI wire, Glass Gloria Cat no-GWT-713 Energy+ cat no-EPBL-23031 Cosmo cat no-BDTCL-WSL-05 Asha Cat no-ACS-BF-WT-220 NET Crescent-CML-40 or equivalent.		Each	1,230.00	1229	1227	1227
6.10.1.2	Material: Aluminium alloy Aluminium Sheet, MS sheet, GI wire, Glass Gloria Cat no-GWT-706 Asha Cat No. ACS-BF WT 520 NET Crescent-CML-26 or equivalent .		Each	1,423.00	1422	1420	1420
6.10.1.3	Light source 9W LED Bulb Gloria Cat no-GLOD-1439 Energy + EPSL 23001 Cosmo cat no-BDTCL-WSL-07 Asha Cat No. ACS-BF WT 261 or equivalent.		Each	889.00	889	887	887

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.10.1.4	Light source 9W LED Bulb Material: Aluminium alloy Acrylic H-220mm P-170mm D-90mm Gloria Cat no-GLOD-1409 Energy+ EPSL 23006 Cosmo cat no-BDTCL-WSL-09 Asha Cat No. ACS-BF WT 262 or equivalent.	Each	1,638.00	1638	1635	1635
6.10.2	<u>LED WATER TIGHT LIGHT FITTINGS</u> Supply & fixing LED water tight light fittings of following specifications: Luminous efficacy: 80 lm/w(minimum), Power Factor: minimum 0.95 Colour Rendering Index(Ra) : 70≤Ra<85 Driver: Should be of IEC standard such as MEANWELL/OSRAM/ENERGY+/SIGNIFY(PHILIPS) or equivalent LED chips :EPISTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Colour temperature : 3500K-6500K (Warm-White) Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).	Each		0	0	0
6.10.2.1	Gloria Cat no-GLOD-1440, 2x5W Energy+ cat no-EPBL 23008 Cosmo Cat No. BDTCL-WSL-10 Asha Cat No. ACS-LOD 263 or equivalent.	Each	2,705.00	2705	2703	2703



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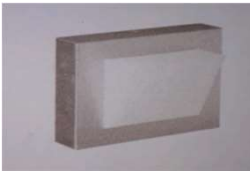
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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.11	<u>LED OUTDOOR FITTING</u> Supply & fixing LED outdoor light fittings of following specifications: Luminous efficacy: 80 lm/w(minimum), Power Factor: minimum 0.95 Colour Rendering Index(Ra) : $70 \leq Ra < 85$ Driver: Should be of IEC standard such as MEANWELL/OSRAM/ENERGY+/SIGNIFY(PHILIPS) or equivalent . LED chips :EPISTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Colour temperature : 3500K-6500K (Warm-White) Ingress Protection: IP 68 Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
6.11.1	Gloria Cat no-GLOD-1432 Energy + EPBL 23035 Cosmo cat no-BDTCL-WSL-11 Adex-AD WL0 Asha cat no-ACS-LOD-222 or equivalent.			0	0	0
		Each	8,664.00	8664	8661	8661

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Item No.	Description of Items		Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.11.2	Light source 15W LED Bulb Material: Aluminium alloy Acrylic / Glass L-270mm H-140mm P-100mm Gloria Cat no-GLOD-1402-15w Energy+ cat no-EPBL-23034 Cosmo cat no-BDTCL-WSL-12 Adex-AD WL Asha cat no-ACS-LOD-264 (15 w) or equivalent.		Each	3,046.00	3045	3043	3043
6.11.3	Light source 15W LED Bulb Material: MS Sheet, Acrylic L-200mm H-200mm P-110mm GLORIA - GLOD 1415 (20 W) Energy+ cat no-EPBL-23033 Cosmo cat no-BDTCL-WSL-13 Adex-AD WLC Asha Cat no-ACS-LOD-265 (20 W) or equivalent		Each	1,728.00	1728	1726	1726
6.11.4	Light source 15W LED Bulb Material: Aluminium alloy Acrylic / Glass L-120mm H-285mm P-120mm GLORIA - GLOD 1412 (25 W) Energy+ cat no-EPBL-23032Adex-AD WLFG Cosmo cat no-BDTCL-WSL-13 Asha Cat No. ACS-LOD 266 or equivalent		Each	2,484.00	2484	2482	2482
6.11.5	GLORIA - GLOD 1445 Energy+ cat no-EPLWW-29031 Cosmo cat no-BTCL-WSL-13 Adex-AD GLC Asha Cat No-ACS-LOD-267 (18/24 w) or equivalent.		Each	6,139.00	0	0	0
6.11.1.5.1	18 W			6139	6137	6137	6137

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.11.1.5.2	24 W		7,529.00	7528	7526	7526
6.12	<u>FOUNTAIN / LED UNDERWATER LIGHT FITTINGS</u> Supply & fixing LED under water light fittings of following specifications: Luminous efficacy: 60 lm/W(minimum), Power Factor: minimum 0.95 Colour Rendering Index(Ra) : 70≤Ra<85 Ingress Protection-IP68 Driver: Should be of IEC standard such as MEANWELL/OSRAM/ENERGY+/SIGNIFY(PHILIPS) or equivalent LED chips :EPISTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
6.12.1	GLORIA cat no-GLUW-1803 Energy+ cat no-EPIGL-21023 Cosmo cat no-BDTCL-UWL-01 Adex-AD PROLED 830 Asha cat no-ACS-LUWL 625 (6/9/12W) or equivalent.			0	0	0
6.12.1.1	6 W		4,477.00	4477	4475	4475
6.12.1.2	9 W		5,498.00	5498	5495	5495
6.12.1.3	12 W		5,782.00	5782	5780	5780
6.12.2	GLORIA cat no-GLUG-1908 Energy+ cat no-EPUWL-15001 Cosmo cat no-BDTCL-UWL-02 Adex-AD PROLED 865 Asha Cat no-ACS-LUWL-626 or equivalent.			0	0	0



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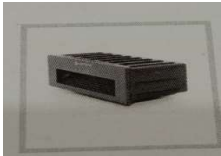
Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.12.2.1	6 W	Each	4,250.00	4250	4248	4248
6.12.2.2	12 W	Each	5,725.00	5725	5722	5722
6.12.2.3	18 W	Each	8,790.00	8790	8787	8787
6.12.2.4	24 W	Each	10,492.00	10492	10490	10490
6.12.3	GLORIA cat no-GLUW-1807 Energy+ cat no-EPULM-15004 Cosmo cat no-BPTCL-UWL-02 Adex-AD PROLED 855 Asha Cat no-ACS-LUWL-629 or equivalent.	Each		0	0	0
6.12.3.1	6 W			6,015.00	6015	6013
6.12.3.2	12 W			7,655.00	7655	7652
6.12.4	Supply & Fixing of fountain light adaptor of the following sizes AC / AC type, IP68 as per sample accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
6.12.4.1	10 VA			1,923.00	1923	1921
6.12.4.2	20 VA	Each	3,115.00	3115	3112	3112
6.12.4.3	30 VA	Each	3,682.00	3682	3680	3680
6.12.4.4	40 VA	Each	4,313.00	4313	4310	4310
6.12.4.5	50 VA	Each	4,691.00	4692	4689	4689
6.12.4.6	60 VA	Each	5,070.00	5070	5067	5067
6.12.5	Supply & Fixing of fountain light junction box of the following sizes as per sample accepted / approved by the Engineer-in-charge (with 2 years warranty). :	Each		0	0	0
6.12.5.1	4 way			2,320.00	2321	2318
6.12.5.2	6 way			3,285.00	3285	3283
6.13	<u>FOOT LIGHT FITTINGS</u>			0	0	0
6.13.1	<u>FOOT LIGHT FITTINGS(EXCEPT LAMP)</u>			0	0	0



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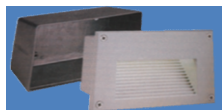
Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.13.1.1	Providing & fixing the stair light fitting with earth terminal, necessary wiring with 2 x 0.4 sq.mm stranded PVC insulated flexible FR cable etc. The fittings shall be suitable for use of LED lamp and complete sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty). Material: Aluminium alloy Glass/ Polycarbonate GLORIA cat no-GLFL-1508, 3W Energy+ cat no-EPSTL-13022 Cosmo cat no-BPTCL-STRL-03 ADEX AD SHY830 Asha Cat No. ACS-LFM 621 Crescent-CFLI-036 or equivalent. 	Each	1,570.00	1570	1567	1567
6.13.1.2	Material: Aluminium alloy Glass/ Polycarbonate Energy+ cat no-EPSTL-13024 ADEX AD SHY865 Asha Cat No. ACS-F 245 or equivalent. 	Each	1,570.00	1570	1567	1567
6.13.2	<u>LED FOOT LIGHT FITTINGS</u> Supply & fixing LED foot light fittings of following specifications: Luminous efficacy: 80 lm/w(minimum), Power Factor: minimum 0.95 Colour Rendering Index(Ra) : i) For Residential building Ra≥80 ii) For office and other types of buildings 70≤Ra<85			0	0	0
				0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Driver: Should be of IEC standard such as MEANWELL/OSRAM/ENERGY+/SIGNIFY (PHILIPS) or equivalent LED chips :EPSTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Colour temperature : 3500K-6500K (Warm-White) Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
6.13.2.1	Material: Aluminium alloy Glass/Polycarbonate GLORIA model no - GLFL - 1513 Energy+ cat no-EPSTL-13001 Cosmo cat no-BPTCL-STRL-04 ADEX AD PROLED 865 Asha Cat no-ACS-LTF-243 (3/5/7 w) Crescent-CFL-427 (I) or equivalent.			0	0	0
6.13.2.1.1	3 W	Each	1,570.00	1570	1567	1567
6.13.2.1.2	5 W	Each	1,815.00	1815	1812	1812
6.13.2.1.3	7 W	Each	2,382.00	2382	2379	2379
6.13.2.2	Motion Sensor Asha Cat No. ACS-LFT 1810 MS 3W Cosmo Cat No. BDTCL-STRL-08 Energy+ cat no-EPSTL-49007 Gloria-GMFL-1540, 3W or equivalent.					
		Each	2,535.00	2534	2532	2532
6.13.3	<u>LED FLOOR MOUNTED LIGHT</u>			0	0	0



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply & fixing LED floor mounted light fittings of following specifications: Luminous efficacy: 60lm/w(minimum), Power Factor: minimum 0.95 Colour Rendering Index(Ra) : i) For Residential building Ra≥80 ii) For office and other types of buildings 70<Ra<85 Ingress Protocol:IP 67 Driver: Should be of IEC standard such as MEANWELL/OSRAM/ENERGY+/SIGNIFY(PHILIPS) or equivalent LED chips :EPSTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
6.13.3.1	Material: Aluminium alloy Aluminium reflector, Heat proof Glass/Polycarbonate Gloria Cat No-GLUG-1904 ENERGY + model no - EPFL - 21001/IP65 Cosmo cat no-BDTCL-FL-01 ADEX AD PROLED 865 Asha Cat no-ACS-LEM 621 (3/5/6 w) PASHA: PE FL 6026/5W or equivalent			0	0	0
6.13.3.1.1	3 W		2,989.00	2989	2987	2987
6.13.3.1.2	5W		3,386.00	3386	3383	3383
6.13.3.1.3	6 W		3,613.00	3612	3610	3610



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.13.3.2	Material: Aluminium alloy Aluminium reflector, Heat proof Glass/Polycarbonate Gloria-GLUW-1804 Energy+ EPIGL-21028 Cosmo Cat No. BDTCL-03 ADEX AD PROLED 840 Asha Cat No. ACS-LFM 641 or equivalent			0	0	0
6.13.3.2.1	3W		2,251.00	2251	2249	2249
6.13.3.2.2	9W		3,386.00	3386	3383	3383
				0	0	0
6.14	<u>LED TRACK SPOT LIGHT FITTINGS</u> Supply & fixing LED track spot light fittings of following specifications: Luminous efficacy: 80 lm/w(minimum), Power Factor: minimum 0.95 Colour Rendering Index(Ra) : i) For Residential building $Ra \geq 80$ ii) For office and other types of buildings $70 < Ra < 85$ Driver: Should be of IEC standard such as MEANWELL/OSRAM/ENERGY+/SIGNIFY(PHILIPS) or equivalent LED chips :EPISTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.14.1	ADEX AD FUL 840 Asha Cat No. ACS-LTL 1774-15W Cosmo cat no-BDTCL-TSL-02 Energy+ cat no-EPTSL-22006 Gloria-GCTL-1005 or equivalent.		3,386.00	3386	3383	3383
6.14.2	Gloria-GCTL-1007 Energy+ EPTSL-22001 Cosmo Cat No. BDTCL-TSL-01 ADEX AD FULP 865 Asha Cat No. ACS-LTL 1773 or equivalent.			0	0	0
6.14.2.1	10W		1,570.00	1570	1567	1567
6.14.2.2	15W		1,911.00	1911	1908	1908
				0	0	0
6.15	<u>LED SIGN</u> Supply & fixing of LED sign of the following features and model with all necessary elements such as drivers, chips etc. complete model and sample shall be approved by the Engineer.			0	0	0
				0	0	0
6.15.1	Exit Light Gloria cat no-GEXT 54, 3W ENERGY + model no- (green / red) EPES - 34001 (3 W) (green) & EPES - 34005 (3 W) (red) Cosmo cat no-SE-01 Asha Exit Light 3W-Asha Cat No. ACS SIGN 001 or equivalent		946.00	946	943	943

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.15.2	Welcome Light Gloria cat no-GWC.003, 3W ENERGY + model no- EPES - 35004 (3 W) Cosmo cat no-BDTCL-SWC-01 Asha Welcome Light 3W-Asha Cat No. ACS-SIGN 005 or equivalent.		2,228.00	2228	2226	2226
6.15.3	Restroom Light Gloria cat no-GRR-33, 3W/GRR-22, 3W Energy+ cat no-EPES-35006 Cosmo cat no-BDTCL-SWC-01 Asha Restroom Light 3W- Asha Cat No. ACS-SIGN 007 or equivalent.		2,399.00	2399	2396	2396
6.15.4	Asha No Smoking Light 3W- Asha Cat No. ACS-SIGN 010 Cosmo cat no-BDTCL-SRR-01 Energy+ cat no-EPES-35002 Gloria cat no-GSM.44, 3W or equivalent.		2,399.00	2399	2396	2396
6.15.5	Wi-Fi Light Gloria cat no-GWL-FL.30, 3W Energy+ cat no-EPES-35009 Cosmo cat no-SWIFI-01 Asha Wi-Fi Light 3W-Asha Cat No. ACS-SIGN 011 or equivalent.		2,319.00	2320	2317	2317



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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.15.6	VIP Light Gloria cat no- GVIP.50, 3W Energy+ cat no-EPES-35010 Cosmo cat no-BDTCL-SVIP-01 Asha VIP Light 3W-Asha Cat No. ACS-SIGN 012 or equivalent.		2,319.00	2320	2317	2317
6.15.7	Disabled Light Gloria cat no- GDS.99, 3W Energy+ cat no-EPES-35013 Cosmo Cat No. BDTCL-SNDIS-01 Asha Light 3W-Asha Cat No. ACS-SIGN 013 or equivalent.		1,740.00	1740	1738	1738
6.16	<u>LED WALL WASHER LIGHT FITTINGS</u> Supply & fixing LED Wall Washer Light Fittings of following specifications: Luminous efficacy: 100lm/w(minimum), Power Factor: minimum 0.95 Colour Rendering Index(Ra) :70≤Ra<85 Driver: Should be of IEC standard such as MEANWELL/OSRAM/ENERGY+/SIGNIFY(PHILIPS) or equivalent Ingress Protection: IP 65 LED chips :EPISTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Colour temperature : 3500K-6500K (Warm-White) Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.16.1	Gloria cat no- GAOL, 2126, 12W Energy+ EPLWW-29032 Cosmo Cat No. BDTCL-BWW-05 Asha Cat No. ACS-LWL 1787 or equivalent.		2,785.00	2784	2782	2782
6.16.2	Gloria-GAOL-2123 Energy+ EPLWW-29012 Cosmo Cat No. BDTCL-LWW-02 ADEX AD SHY 840					
6.16.2.1	Asha Cat No. ACS-LWL 1797 or equivalent. 12 W		5,259.00	0	0	0
6.16.2.2	36 W		9,231.00	9231	9229	9229
6.17	<u>LED STRIP LIGHT FITTINGS</u> Supply & fixing LED track strip light fittings of following specifications: Luminous efficacy: 80 lm/w(minimum), Power Factor: minimum 0.95 Colour Rendering Index(Ra) :i) For Residential building Ra≥80 ii) For office and other types of buildings 70≤Ra<85 Driver: Should be of IEC standard such as MEANWELL/OSRAM/ENERGY+/SIGNIFY(PHILIPS) or equivalent LED chips :EPSTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent. Colour temperature : 3500K-6500K (Warm-White) Ingress Protection: IP 65 Model & sample to be accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.17.1	Gloria Cat No-GSL-8900 Energy+ EPSS-46002 Cosmo Neo Neon Strip Light (White/Warm/Red/Blue/Green/Yellow/RGB) BDTCL-SNEON-01 Adex-AD DCD 16W 830 Asha Neo Neon Strip Light (White/Warm/Red/Blue/Green/Yellow/RGB)- 1M/10W or equivalent	mtr	1,452.00	1451	1450	1450
6.17.2	DC FLEXIBLE STRIP of the following model number of Cosmo/Energy+ or similar product of GLORIA /Asha/Adex etc. BDTCL-Strip-01 Energy+ EPSS-46008					
6.18	<u>HALOGEN LAMP</u> Supply & Fixing of the following halogen lamp having 12V/230V/250V, 50Hz manufactureres by OSRAM / SIGNIFY(PHILIPS) / GE / HARMONICS or equivalent brand accepted / approved by the Engineer-in-charge (with 2 years warranty).					
6.18.1	35 / 50 watt halogen lamp		204.00	205	203	203
6.18.2	300 / 500 watt halogen lamp		545.00	545	544	544
6.18.3	1000 / 1500 watt halogen lamp		1,213.00	1213	1212	1212
6.19	<u>METAL HALIDE LAMP</u>					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply & fixing of the following metal halide lamp having 230V / 250V, 50Hz manufactureres by OSRAM / SIGNIFY(PHILIPS) / GE / HARMONICS or equivalent brand accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
6.19.1	250 watt metal halide lamp		2,169.00	2170	2166	2166
6.19.2	400 watt metal halide lamp		2,295.00	2295	2293	2293
				0	0	0
6.20	<u>LED BULBS & TUBE LAMPS</u>			0	0	0
	Supply & fixing of the following LED bulbs & tube lamps manufacturers by OSRAM / SIGNIFY(PHILIPS) / ENERGYPAC / CBE / CORONA / HAVELLS / GE / EDISON / EASTERN / PRODIP / MEP / METRO /Megaman/ Walton/ HARMONICS / SUPERSTAR/ TRANSTEC / ENERGY+ / Gloria / Adex / PASHA / SQ / Click / COSMO or equivalent brand accepted / approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
6.20.1	3 watt LED bulb		158.00	157	157	157
6.20.2	5 watt LED bulb		164.00	164	164	164
6.20.3	7 watt LED bulb		214.00	215	215	215
6.20.4	9 watt LED bulb		240.00	239	239	239
6.20.5	12 watt LED bulb		303.00	302	302	302
6.20.6	15 watt LED bulb		328.00	328	328	328
6.20.7	18 watt LED bulb		391.00	391	391	391
6.20.8	20 watt LED bulb		416.00	416	416	416
6.20.9	30 watt LED bulb		719.00	718	718	718
6.20.10	600 mm / 2'- 9 / 10 watt-T5 AC LED tube Lamp		404.00	404	404	404

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.20.11	600 mm / 2'- 9 / 10 watt-T8 AC LED tube Lamp		441.00	441	441	441
6.20.12	1200 mm / 4'- 18 / 20 watt-T5 AC LED tube Lamp		479.00	479	479	479
6.20.13	1200 mm / 4'- 18 / 20 watt-T8 AC LED tube Lamp		504.00	505	505	505
6.20.14	4'(18W) 25 mm LED Tube Light		416.00	416	416	416
6.20.15	2'(9W) 25mm LED Tube Light		366.00	366	366	366
				0	0	0
6.21	<u>BALLAST FOR MERCURY, SODIUM & METAL HALIDE LAMP</u>			0	0	0
	Supply & fixing of the following ballast for mercury, sodium & metal halide lamp manufacturers by SIGNIFY(PHILIPS) / OSRAM / GE / HARMONICS / TRANSTEC or equivalent brand accepted /approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
6.21.1	High pressure metal halide lamp ballast 70 watt-BHL		2,484.00	2484	2482	2482
6.21.2	High pressure metal halide lamp ballast 150 watt-BHL		2,597.00	2596	2594	2594
6.21.3	High pressure metal halide lamp ballast 250 watt-BHL		2,971.00	2971	2968	2968
6.21.4	High pressure metal halide lamp ballast 400 watt-BHL 400L		3,745.00	3745	3743	3743
				0	0	0
6.22	<u>IGNITOR :</u>			0	0	0
	Supply & fixing of the following size ignitors:			0	0	0
6.22.1	For 250 / 400 watt Metal Halide lamp		971.00	971	968	968
				0	0	0
6.23	<u>LED CHIPS & DRIVER</u>			0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply & fixing of the following LED Driver manufactured by OSRAM / SIGNIFY(PHILIPS) / Done and LED chips manufactured by EPISTAR / OSRAM / SIGNIFY(PHILIPS) / CREE / BRIDGELUX or equivalent as per IEC standard with 3(three) years warranty, Model & sample approved by the Engineer-in-charge (with 2 years warranty).			0	0	0
6.23.1	10W LED Wall Spot Light Chips		214.00	215	212	212
6.23.2	10W LED Wall Spot Light Driver		214.00	215	212	212
6.23.3	20W LED Wall Spot Light Chips		265.00	265	262	262
6.23.4	20W LED Wall Spot Light Driver		265.00	265	262	262
6.23.5	30W LED Wall Spot Light Chips		366.00	366	363	363
6.23.6	30W LED Wall Spot Light Driver		366.00	366	363	363
6.23.7	5W LED Wall Barcket Light Chips		195.00	195	193	193
6.23.8	5W LED Wall Barcket Light Driver		195.00	195	193	193
6.23.9	10W LED Wall Barcket Light Chips		214.00	215	212	212
6.23.10	10W LED Wall Barcket Light Driver		214.00	215	212	212
6.23.11	3W LED Panel Light Chips		145.00	145	143	143
6.23.12	3W LED Panel Light Driver		145.00	145	143	143
6.23.13	6W LED Panel Light Chips		161.00	161	159	159
6.23.14	6W LED Panel Light Driver		161.00	161	159	159
6.23.15	12W LED Panel Light Chips		214.00	215	212	212
6.23.16	12W LED Panel Light Driver		214.00	215	212	212
6.23.17	18W LED Panel Light Chips		246.00	246	244	244
6.23.18	18W LED Panel Light Driver		246.00	246	244	244
6.23.19	24W LED Panel Light Chips		265.00	265	262	262
6.23.20	24W LED Panel Light Driver		265.00	265	262	262
6.23.21	2'x2' LED Panel Light 36W Chips		908.00	907	905	905

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.23.22	2'x2' LED Panel Light 36W Driver		1,097.00	1098	1095	1095
6.23.23	2'x2' LED Panel Light 48W Chips		971.00	971	968	968
6.23.24	2'x2' LED Panel Light 48W Driver		971.00	971	968	968
6.23.25	20W LED Flood Light Chips		454.00	454	451	451
6.23.26	20W LED Flood Light Driver		454.00	454	451	451
6.23.27	30W LED Flood Light Chips		467.00	467	465	465
6.23.28	30W LED Flood Light Driver		536.00	535	533	533
6.23.29	50W LED Flood Light Chips		618.00	618	616	616
6.23.30	50W LED Flood Light Driver		971.00	971	968	968
6.23.31	50W LED Street Light Chips EPISTAR		618.00	618	616	616
6.23.32	50W LED Street Light Chips Cree		1,097.00	1098	1095	1095
6.23.33	50W LED Street Light Driver IEC Standard		971.00	971	968	968
6.23.34	50W LED Street Light Driver Meanwell		2,800.00	2800	2797	2797
6.23.35	100W LED Street Light Driver Meanwell		4,439.00	4439	4437	4437
6.23.36	Athilic Garden RGB Chips		643.00	643	640	640
6.23.37	Athilic Garden RGB Driver		908.00	907	905	905
				0	0	0
6.24	<u>MISCELLANEOUS ITEMS</u>			0	0	0
6.24.1	Tube light holder			0	0	0
6.24.1.1	two (2) nos in set		206.00	206	203	203
6.24.1.2	L-Type		218.00	218	216	216
6.24.1.3	Round type		221.00	221	218	218
6.24.2	Bakelite holder			0	0	0
6.24.2.1	Pin type		208.00	208	206	206
6.24.2.2	Pendent / bracket holder		180.00	180	178	178
6.24.2.3	Batten holder		202.00	201	199	199
6.24.3	Brass holder with porcelain base (screw / pin type)			0	0	0
6.24.3.1	Pin type		233.00	233	231	231
6.24.3.2	Screw type (E-14)		233.00	233	231	231

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
6.24.3.3	Screw type (E-27)		251.00	251	249	249
6.24.3.4	Screw type (E-40)		332.00	332	329	329
				0	0	0
6.25	GI PIPE BRACKET			0	0	0
	Providing and fixing 1524 mm (5') long 38.1 mm (1.5") dia GI pipe bracket for fixing street light fitting complete with 2 (two) nos. of "D" clamps of required size, nuts, bolts etc. as per sample accepted / approved by the Engineer.					
6.25.1	5' long GI pipe bracket	Each	1,336.00	1335	1335	1335

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Subhead-7

Air Cooling System & Related Works

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.1	WINDOW TYPE AIR-COOLER Supply, Installation, Testing & Commissioning window type air-cooler with remote control of following cooling capacity based on indoor temperature 27°-3°C DB / 19.5°-22°C WB and outdoor temperature 35°-4°C DB at high fan speed condition suitable for installation & operation in tropicalized country like Bangladesh & as per detailed specifications & standard as mentioned below : - (1). Type : Window type (2). Compressor : Hermitically sealed reciprocating / rotary compressor. (3). Refrigerant : Internationally accepted & recommended gas (CFC free) (4). Blower motor : Well Balanced propeller type direct driven centrifugal type blower fan for condenser & evaporator with regulator (5). Power supply : 2-25V, single phase, 5 Hz. AC supply (6). Condensing pipe : Made of copper $EER = \frac{RTU/HR}{WATT}$ (7). EER Minimum 8.5 COP Minimum 2.5 (W/W) (8) Other features : (8.1). Fancy & adjustable air circular louver. (8.2) Removable & washable filter. (8.3) Thermostat control switch. (8.4) Fresh air intake arrangement .					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Standard : Major component shall be manufactured as per relevant international standard & code. Documents : Manufacturing company shall have the following certificate. (1). ISO-91. (2). CE Certification / UL Listing. Warranty : The bidder should provide the guaranty of compressor for at least 2 years & free service with spares for 2 years from the date of commissioning & it should be obtained from the air cooler selling agency.					
7.1.1	Any brand manufactured or assembled in JAPAN / MALAYSIA / SOUTH KOREA / TAIWAN / THAILAND / USA / EU countries accepted / approved by the Engineer-in-charge. in accordance with fulfillment of the above specifications and having relevant certificates as mentioned.					
7.1.1.1	171 - 18 BTU/HR capacity	Each	92,722.00	92652	92395	92395
7.1.1.2	2251 - 24 BTU/HR capacity	Each	109,117.00	1946	18789	18789
7.1.2	Any brand manufactured or assembled in BANGLADESH / CHINA / VIETNAM / TURKEY accepted / approved by the Engineer-in-charge. in accordance with fulfillment of the above specifications and having relevant certificates as mentioned.					
7.1.2.1	171 - 18 BTU/HR capacity	Each	52,367.00	52299	5241	5241
7.1.2.2	2251 - 24 BTU/HR capacity	Each	61,195.00	61125	6868	6868
7.2	SPLIT TYPE AIR-COOLER					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installation, testing & commissioning of split type air-cooler with inverter comprising condensing and evaporating units having following cooling capacity based on indoor temperature 27°-3°C DB / 19.5°-22°C WB and outdoor temperature 35°-4°C DB at high fan speed condition suitable for installation & operation in tropicalized country like Bangladesh & as per detailed specifications & standard as mentioned below : OUTDOOR UNIT / CONDENSING UNIT (1). Type : Compact weather proof outdoor type condensing unit (2). Compressor : Hermitically sealed reciprocating / rotary compressor. (3). Refrigerant : Internationally accepted & recommended and most commonly used gas (CFC free) (4). Blower motor : Well balanced type direct driven centrifugal type blower fan (5). Power supply : (5.1). 2-25 V, single phase, 5 Hz. AC supply [up to 3 BTU/HR] (5.2). 38-44 V 3-phase, 5 Hz. AC supply [above 3 BTU/HR] (6). Condensing pipe / coil : Made of copper 7). EER/COP : For upto 6 BTU/HR EER should be minimum 9.23 (BTU/HR)/WATT and COP Should be minimum 2.7 (W/W) For above 6 BTU/HR EER should be minimum 1.5 (BTU/HR)/WATT and COP should be minimum=3.8 (W/W)(8). Others features : (8.1). Well balanced in all respect having interlock with the fan coil unit.					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	(8.2). Compressor dully equipped with vibration isolator, thermostatic & overload controls, magnetic contactors and all other standard accessories complete. (8.3). Refrigerant copper pipe [From outdoor to indoor unit] with thermal insulation, refrigerant charging arrangement etc.[Minm length 1 mtr.] (8.4). Reqd. size PVC insulated & sheathed cable with ECC through water grade PVC pipe from outdoor to indoor unit. (8.5) Sound level : maximum 65 dB(A) at 1 meter INDOOR UNIT / FAN COIL UNIT Features : (1). Direct expansion system fan coil unit with well balanced direct driven centrifugal type fan. (2). Fancy & adjustable air circulating louver grill, removable & washable type filter . (3). Condensing water drain out PVC flexible pipe with necessary insulation (4). Thermostatic switch and remote control switch. (5). Sound level : maximum 44 dB(A) at 1 meter Standard : Major component shall be manufactured as per relevant international standard & code. Documents :Manufacturing company shall have the following certificate : (1). ISO-91. (2). CE Certification / UL Listing. Warranty : The bidder should provide the guaranty of compressor for at least 2 years & free service with spares for 2 years from the date of commissioning & it should be obtained from the air cooler selling agency.					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.2.1	Any brand manufactured or assembled in JAPAN / MALAYSIA / SOUTH KOREA / TAIWAN / THAILAND / USA / EU countries accepted / approved by the engineer in accordance with fulfillment of the above specifications and having relevant certificates as mentioned.					
7.2.1.1	Capacity : 12 BTU/HR					
7.2.1.1.1	Wall mounted	Each	67,500.00	67317	66632	66632
7.2.1.1.2	Wall mounted (Inverter Type)	Each	92,722.00	92539	91853	91853
7.2.1.2	Capacity : 17-18 BTU/HR					
7.2.1.2.1	Wall mounted	Each	112,900.00	112694	111922	111922
7.2.1.2.2	Wall mounted (Inverter Type)	Each	125,511.00	12534	124533	124533
7.2.1.2.3	Wall mount (Heating and Cooling Both)	Each	-	1483	147232	147232
7.2.1.3	Capacity : 225-24 BTU/HR					
7.2.1.3.1	Wall mounted	Each	125,511.00	12534	124533	124533
7.2.1.3.2	Wall mounted (Inverter Type)	Each	138,122.00	137915	137143	137143
7.2.1.3.3	Wall mount (Heating and Cooling Both)	Each	157,038.00	15684	15659	15659
7.2.1.3.4	Cassette type	Each	174,946.00	174739	173967	173967
7.2.1.3.5	Cassette type (Inverter Type)	Each	197,393.00	197185	196414	196414
7.2.2.1	Capacity : 28-3 BTU/HR					
7.2.2.1.1	Wall mounted	Each	188,566.00	188358	187586	187586
7.2.2.1.2	Wall mounted (Inverter Type)	Each	207,482.00	27274	2652	2652
7.2.2.1.3	Cassette type	Each	-	193357	192414	192414
7.2.2.1.4	Cassette type (Inverter Type)	Each	206,221.00	25967	2524	2524
7.2.2.1.5	Ceiling suspended	Each	206,221.00	25967	2524	2524
7.2.2.1.6	Ceiling suspended (Inverter Type)	Each	235,226.00	234972	23429	23429

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.2.2.2	Capacity : 34-36 BTU/HR					
7.2.2.2.1	Ceiling suspended	Each	227,660.00	227451	226679	226679
7.2.2.2.2	Ceiling suspended (Inverter Type)	Each	240,271.00	2462	23929	23929
7.2.2.2.3	Cassette type	Each	254,143.00	253888	252945	252945
7.2.2.2.4	Cassette type (Inverter Type)	Each	275,582.00	275327	274383	274383
7.2.2.2.5	Floor standing type	Each	248,946.00	248691	247748	247748
7.2.2.2.6	Floor standing type (Inverter Type)	Each	Unit Rate(Say)(Tk	29826	29783	29783
7.2.2.3	Capacity : 46-48 BTU/HR					
7.2.2.3.1	Ceiling suspended	Each	260,448.00	26193	25925	25925
7.2.2.3.2	Ceiling suspended (Inverter Type)	Each	285,670.00	285416	284472	284472
7.2.2.3.3	Cassette type	Each	285,670.00	285416	284472	284472
7.2.2.3.4	Cassette type (Inverter Type)	Each	304,587.00	34331	33388	33388
7.2.2.3.5	Floor standing type	Each	297,497.00	297242	296299	296299
7.2.2.3.6	Floor standing type (Inverter Type)	Each	361,336.00	36180	36136	36136
7.2.2.4	Capacity : 58-6 BTU/HR					
7.2.2.4.1	Ceiling suspended	Each	314,186.00	31393	312987	312987
7.2.2.4.2	Cassette type	Each	10.00	329553	32869	32869
7.2.2.4.3	Floor standing type	Each	321,773.00	321517	32574	32574
7.2.2.5	Capacity : 77-8 BTU/HR					
7.2.2.5.1	Floor standing type	Each	493,723.00	49345	492412	492412
7.2.2.6	Capacity : 95-98 BTU/HR					
7.2.2.6.1	Floor Standing type	Each	676,336.00	67652	67521	67521
7.2.2.7	Capacity:116-12 BTU/HR					
7.2.2.7.1	Floor standing type	Each	703,090.00	72737	7145	7145

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.2.3	Any brand manufactured or assembled in BANGLADESH / CHINA / VIETNAM / TURKEY approved / accepted by the Engineer-in-charge. in accordance with fulfillment of the above specifications and having relevant certificates as mentioned.					
7.2.3.1	Capacity : 12 BTU/HR					
7.2.3.1.1	Wall mounted	Each	-	5947	5345	5345
7.2.3.2	Capacity : 17-18 BTU/HR					
7.2.3.2.1	Wall mounted	Each	62,456.00	62273	61587	61587
7.2.3.3	Capacity : 225-24 BTU/HR					
7.2.3.3.1	Wall mounted	Each	72,545.00	72361	71676	71676
7.2.3.3.2	Cassette type	Each	124,250.00	12466	12338	12338
7.2.3.4	Capacity : 34-36 BTU/HR					
7.2.3.4.1	Ceiling suspended	Each	158,299.00	15869	157212	157212
7.2.3.4.2	Cassette type	Each	158,299.00	15869	157212	157212
7.2.3.5	Capacity : 46-48 BTU/HR					
7.2.3.5.1	Ceiling suspended	Each	-	189597	188739	188739
7.2.3.5.2	Cassette type	Each	189,827.00	189597	188739	188739
7.2.3.6	Capacity : 58-6 BTU/HR					
7.2.3.6.1	Ceiling suspended	Each	208,743.00	28512	27655	27655
7.2.3.6.2	Cassette type	Each	208,743.00	28512	27655	27655
7.3	REFRIGERENT COPPER PIPES WITH THERMAL INSULATION					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply & installation of copper refrigerant pipe complete with all necessary pipe fitting such as bends, tees, reducers, sockets, gate valves etc.as per drawing and direction. The concealed pipe shall be covered with pvc pipe with nitrile rubber insulation having thickness 19 mm for VRF system and thickness 13 mm for split type unit and be installed with proper hangers supports, clamp as per site condition and complying standard. Pipe work shall be tested unto the recommendation and direction of Engineer-in-charge.					
7.3.1	1/4" dia copper tube	Meter	353.00	354	354	354
7.3.2	3/8"dia copper tube	Meter	340.00	34	34	34
7.3.3	1/2" dia copper tube	Meter	536.00	535	535	535
7.3.4	5/8" dia copper tube	Meter	479.00	479	479	479
7.3.5	3/4"dia copper tube	Meter	92,722.00	656	656	656
7.3.6	1"dia copper tube	Meter	794.00	794	794	794
7.3.7	1-1/8"dia copper tube	Meter	1,122.00	1122	1122	1122
7.3.8	1-1/4"dia copper tube	Meter	1,305.00	135	135	135
7.3.9	1-3/8"dia copper tube	Meter	1,475.00	1476	1476	1476
7.4	REF NET / BRANCH JOINT					
	Supply & fixing of Y shaped RefNet Joint / T shaped Branched Joint made of pure copper with insulation pressure tolerance not less 45 psi copper thickness should be 2 mm. Y shaped RefNet joint / T shaped Branched Joint as per actual requirement of site and as per direction of the Engineer-in-charge.	Set	7,132.00	7131	7131	7131
7.5	DUCT INSULATION					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply and fixing of thermal insulation on non-exposed ducts with following thickness CFC / HCFC Free Closed Cell Class 'O' Nitrile Rubber Foam Insulation having density of 4-7 Kg/m ³ , thermal conductivity of .37 W/mK at 2°C Mean Temp, Water Vapour Diffusion Resistance (μ) ≥ 7 (without the vapour barrier) and with factory laminated aluminium foil of 12-18 micron thickness; to be applied using manufacturer's recommended rubber based adhesive. The Joints shall be sealed with 5-75mm wide self-adhesive tapes of Aluminium Foil with scrim complete as per specifications and as required.					
7.5.1	13 mm	sqm	1,037.00	137	137	137
7.5.2	25 mm	sqm	1,593.00	1593	1593	1593
7.6	SINGLE PACKAGE DUCTED TYPE AIR-COOLER Supply, installation, testing and commissioning of air cooled single package ducted type air conditioner unit having cooling capacity based on indoor temperature 27°-3° C DB /19.5°-22° C WB and outdoor temperature 35°-4° C in/c hermetic compressor with crankcase heater, internal overload protection, high & low pressure cutout, anti recycling time guard etc. complete, the condenser fan shall be vertical discharge and axial flow type. The motor shall be three-phase with external overload suitable for 415±1%V, 5 Hz. AC supply out-door application. The evaporator fans shall be double inlet forward curved centrifugal type, statically & dynamically balanced, horizontal/bottom (convertible) discharge supply plenum coil section, filter section with filter, supply and return air plenum, wall mounted remote temperature and fan speed controller etc. Refrigerant will be internationally accepted & recommended and most commonly used gas (CFC free). COP should be minimum 3.8.(major components of the machine shall be in conformity with relevant international standards.)					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Any brand manufactured or assembled in JAPAN / MALAYSIA / SOUTH KOREA / THAILAND / USA/ EU countries accepted / approved by the Engineer-in-charge. in accordance with fulfillment of the above specifications and having relevant certificates as mentioned.					
7.6.1	Capacity : 87-9 BTU/HR	Each	109,117.00	724778	723492	723492
7.6.2	Capacity : 96-1 BTU/HR	Each	889,074.00	888717	88743	88743
7.6.3	Capacity : 116-12 BTU/HR	Each	1,027,795.00	127435	126149	126149
7.7	SPLIT DUCTED TYPE AIR-COOLER Supply, installation, testing and commissioning of air cooled split ducted type air conditioner unit having cooling capacity based on indoor temperature 27-3C DB / 19.5-22C WB and outdoor temperature 35-4C including hermetic compressor with crankcase heater, internal overload protection, high & low pressure cutout, anti recycling time guard etc. complete, the condenser fan shall be vertical discharge and axial flow type. The motor shall be three-phase with external overload suitable for outdoor application. The evaporator fans coil shall be ceiling/floor standing double inlet forward curved centrifugal type, statically & dynamically balanced, horizontal discharge supply plenum coil section, filter section with filter, supply and return air plenum, wall mounted remote temperature and fan speed controller etc. Power supply shall be 415±1%V, 3-phase, 5 Hz. AC.Refrigerant will be internationally accepted & recommended and most commonly used gas (CFC free). COP should be minimum 3.8. (major components of the machine shall be in conformity with relevant international standards.)					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Any brand manufactured or assembled in JAPAN / MALAYSIA / SOUTH KOREA / TAIWAN / THAILAND / USA / EU countries accepted / approved by the Engineer-in-charge. in accordance with fulfillment of the above specifications and having relevant certificates as mentioned.					
7.7.1	46-48 BTU/HR capacity	Each	308,969.00	38623	37336	37336
7.7.2	57-6 BTU/HR capacity	Each	453,995.00	453646	45236	45236
7.7.3	77-8 BTU/HR capacity	Each	616,677.00	616325	61539	61539
7.7.4	95-98 BTU/HR capacity	Each	725,132.00	724778	723492	723492
7.7.5	116-12 BTU/HR capacity	Each	828,542.00	828186	826899	826899
7.8	VRF/VRV SYSTEM (OUTDOOR UNIT) Supply, Installation, testing & commissioning of variable refrigerant flow (VRF)/ variable refrigerant volume (VRV) air-cooler comprising condensing units having following cooling capacity based on indoor temperature 27°-3°C DB / 19.5°-22°C WB and outdoor temperature 35°-4°C DB at high fan speed condition suitable for installation & operation in tropicalized country like Bangladesh including all mending good the damaged (all civil works) as per detailed specifications & standard in accordance with fulfillment of above specifications and having relevant certificates as mentioned below :					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	(1) Type : Compact weather proof outdoor type condensing unit (2) Compressor : Dc inverter scroll compressor (only cooling) (3) Refrigerant : Refrigerant will be internationally accepted & recommended and most commonly used gas (CFC free). (4) Blower motor : Well balanced type direct driven centrifugal axial flow type vertical discharge type blower fan. (5) Power supply : 38-44V. three phase, 5 Hz AC supply (6) Condensing pipe / coil : Made of copper (7) Energy Efficiency Ratio (EER) : 1.6 (minimum) (8) Sound level : maximum 65 dB(A) at 1 meter (9). Other features : (9.1). Well balanced in all respect having interlock with the fan coil unit. (9.2). Compressor dully equipped with vibration isolator, thermostatic & overload controls, magnetic contactors and all other standard accessories complete. (9.3). Refrigerant copper pipe (from outdoor to indoor unit) wit thermal insulation, refrigerant charging arrangement etc. (minimum length 1 metre) (9.4). Req'd. size PVC insulated & sheathed cable with ECC through water grade PVC pipe from outdoor to indoor unit. (1). Standard : Major component shall be manufactured as per relevant international standard & code from the same country of origin. (11). Documents : Manufacturing company shall have the following certificate- (11.1). ISO-91. (11.2). CE Certification / UL Listing.					
7.8.1	Any brand manufactured or assembled in JAPAN / MALAYSIA / SOUTH KOREA / TAIWAN / THAILAND / USA / EU countries approved / accepted by the Engineer-in-charge. in accordance with fulfillment of the above specifications and having relevant certificates as mentioned.					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.8.1.1	Cooling capacity : 76-8 BTU/HR	Each	52,367.00	563428	562399	562399
7.8.1.2	Cooling capacity : 94-98 BTU/HR	Each	61,195.00	569733	56875	56875
7.8.1.3	Cooling capacity : 112-116 BTU/HR	Each	-	659516	658486	658486
7.8.1.4	Cooling capacity : 132-136 BTU/HR	Each	-	72163	7233	7233
7.8.1.5	Cooling capacity : 15-154 BTU/HR	Each	67,500.00	752589	75156	75156
7.8.1.6	Cooling capacity : 2-212 BTU/HR	Each	92,722.00	1197453	119540	119540
7.8.2	Any brand manufactured or assembled in BANGLADESH / CHINA / VIETNAM / TURKEY approved / accepted by the Engineer-in-charge. in accordance with fulfillment of the above specifications and having relevant certificates as mentioned.					
7.8.2.1	Cooling capacity : 76-8 BTU/HR	Each	112,900.00	5625	56112	56112
7.8.2.2	Cooling capacity : 94-98 BTU/HR	Each	125,511.00	565824	564795	564795
7.8.2.3	Cooling capacity : 112-116 BTU/HR	Each	52,367.00	574651	573622	573622
7.8.2.4	Cooling capacity : 132-136 BTU/HR	Each	600,157.00	599873	598844	598844
7.8.2.5	Cooling capacity : 15-154 BTU/HR	Each	612,768.00	612484	611455	611455
7.8.2.6	Cooling capacity : 2-212 BTU/HR	Each	687,173.00	686592	684449	684449
7.9	VRF/VRV FAN COIL UNIT (INDOOR UNIT)					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installation, testing and commissioning of the following capacity based on indoor temperature 27°-3°C DB/ 19.5°-22°C WB and outdoor temperature 35°-4°C DB, ceiling mounting type, Variable Refrigerant Flow/ Variable Refrigerant Volume cassette unit consisting of thermo cabinet, dynamically balanced centrifugal blowers, fan motors, direct expansion type cooling coil, Insulated drain tray, electronic refrigerant flow control valve, room temperature sensor & cordless remote controller Infra red sensor, inbuilt condensate drain pump, necessary supports as per the specification and drawings. The unit shall operate when supplied with 23V±1%V, 1Ph-5Hz power. Suitable for installation & operation in tropicalized country like Bangladesh & as per detailed specifications & standard as mentioned below : (1). Direct expansion system fan coil unit with well balanced direct driven centrifugal type fan. (2). Fancy & adjustable air circulating louver grill, removable & washable type filter. (3). Condensing water drain out PVC flexible pipe with necessary insulation. (4). Thermostatic switch and remote control switch. (5). Sound level (h): maximum 44 dB (A) at 1 meter (6). Standard : Major component shall be manufactured as per relevant international standard & code.					
7.9.1	Any brand manufactured or assembled in JAPAN / MALAYSIA / SOUTH KOREA / TAIWAN / THAILAND / USA / EU countries accepted / approved by the Engineer-in-charge. in accordance with fulfillment of the above specifications and having relevant certificates as mentioned.					
7.9.1.1	Cooling capacity : 12, BTU/HR.					
7.9.1.1.1	Wall / ceiling mounted type/ducted type	Each	56,749.00	5668	56423	56423

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.9.1.1.2	Celling mounted cassette type	Each	72,450.00	7239	72124	72124
7.9.1.2	Cooling capacity : 17,-18, BTU/HR.					
7.9.1.2.1	Wall / ceiling mounted type/ducted type	Each	61,195.00	6317	6276	6276
7.9.1.2.2	Celling mounted cassette type	Each	75,641.00	75571	75314	75314
7.9.1.3	Cooling capacity : 22,5-24, BTU/HR.					
7.9.1.3.1	Wall / ceiling mounted type/ducted type	Each	65,029.00	64959	6472	6472
7.9.1.3.2	Celling mounted cassette type	Each	82,091.00	8222	81764	81764
7.9.1.4	Cooling capacity : 28,-3, BTU/HR.					
7.9.1.4.1	Wall / ceiling mounted type/ducted type	Each	75,710.00	7565	75383	75383
7.9.1.4.2	Celling mounted cassette type	Each	85,490.00	85420	85163	85163
7.9.1.5	Cooling capacity : 34,-36, BTU/HR.					
7.9.1.5.1	Wall / ceiling mounted type/ducted type	Each	86,322.00	86252	85995	85995
7.9.1.5.2	Celling mounted cassette type	Each	-	93882	93625	93625
7.9.1.6	Cooling capacity : 46,-48, BTU/HR.					
7.9.1.6.1	Wall / ceiling mounted type/ducted type	Each	97,420.00	97350	9793	9793
7.9.1.6.2	Celling mounted cassette type	Each	99,847.00	99777	9952	9952
7.9.1.7	Cooling capacity : 58,-6, BTU/HR.					
7.9.1.7.1	Wall / ceiling mounted type/ducted type	Each	155,115.00	15544	154786	154786
7.9.2	Any brand manufactured or assembled in BANGLADESH / CHINA / VIETNAM / TURKEY approved / accepted by the Engineer-in-charge. in accordance with fulfillment of the above specifications and having relevant certificates as mentioned.					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.9.2.1	Cooling capacity : 12, BTU/HR.					
7.9.2.1.1	Wall / ceiling mounted type/ducted type	Each	54,227.00	54158	5391	5391
7.9.2.1.2	Ceiling mounted cassette type	Each	64,190.00	64121	63863	63863
7.9.2.2	Cooling capacity : 17,-18, BTU/HR.					
7.9.2.2.1	Wall / ceiling mounted type/ducted type	Each	60,533.00	6463	626	626
7.9.2.2.2	Ceiling mounted cassette type	Each	66,712.00	66643	66385	66385
7.9.2.3	Cooling capacity : 22,5-24, BTU/HR.					
7.9.2.3.1	Wall / ceiling mounted type/ducted type	Each	62,550.00	6249	62224	62224
7.9.2.3.2	Ceiling mounted cassette type	Each	67,973.00	6794	67646	67646
7.9.2.4	Cooling capacity : 28,-3, BTU/HR.					
7.9.2.4.1	Wall / ceiling mounted type/ducted type	Each	68,856.00	68787	68529	68529
7.9.2.4.2	Ceiling mounted cassette type	Each	69,234.00	69165	6897	6897
7.9.2.5	Cooling capacity : 34,-36, BTU/HR.					
7.9.2.5.1	Wall / ceiling mounted type/ducted type	Each	67,500.00	72192	71934	71934
7.9.2.5.2	Ceiling mounted cassette type	Each	73,018.00	72948	72691	72691
7.9.2.6	Cooling capacity : 46,-48, BTU/HR.					
7.9.2.6.1	Wall / ceiling mounted type/ducted type	Each	73,522.00	73453	73195	73195
7.9.2.6.2	Ceiling mounted cassette type	Each	74,279.00	7429	73952	73952
7.9.2.7	Cooling capacity : 58,-6, BTU/HR.					
7.9.2.7.1	Wall / ceiling mounted type/ducted type	Each	75,540.00	7547	75213	75213
7.10	WATER COOLED CHILLERS: AHRI/EUROVENT CERTIFIED					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.1.1	Centrifugal Oil Chiller with Factory Fitted VFD and HFO Refrigerant: Supply, installation, testing and commissioning of AHRI/EUROVENT Certified Centrifugal Water Chilling Units each complete with actual capacity mentioned below (as specified condition) compressor, motor, water cooled condenser, insulated chiller, flow switch at chiller and condenser, shell and tube type evaporator, condenser tube shall be made of copper, condenser fins shall be made of aluminium, vibration isolators, integral refrigerant piping and wiring, accessories as required and called for, automatic and safety controls mounted in central console panel and all mounted on a steel frame complete as per specifications. Motor shall be suitable for power input of $415 \pm 1\%V$, 5 cycles. 3 phase AC supply. Refrigerant will be Internationally accepted & recommended gas (CFC free with zero ozone depleting potential level). All Chillers shall be integrated with VFD drive. The VFD shall be with Water Cooled or Refrigerant Cooled. VFD Shall be with IEEE Active Harmonic Filter for having less than 5% Harmonic Distortion. Power consumption shall not be more than .6 KW/TR according to AHRI condition at full load. The performance of chiller shall be rated in accordance with AHRI/Euro Vent latest version standard: The compressor shall be Semi hermetic/ open drive Centrifugal type. All equipment shall be installed as per international standard and instruction by the Engineer-in-charge. Vendor have to Submit Individual Chillers Part Load data at Constant Condenser and also at Condenser AHRI/Euro Vent Relief Condition. Also vendor have to submit combined Plant Part Load table at constant condenser for multiple chiller plant. Chiller shall be BACnet IP compatible Chilled water inlet/outlet Temp : 12 / 7 deg. C Condenser water inlet/outlet Temp : 32 / 38 deg. C					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	(But it may vary according to location/temperature of particular region)					
	Max. pressure drop for Evaporator : 2 Ft of water					
	Starter : VFD					
	Country Of Origin, manufacturing and shipment:					
	USA/UK/EU/Japan					
7.1.1.1	Cooling capacity: 285~315 TR, COP Minimum 5.8 (W/W)	Each	23,330,322.00	23329880	23329880	23329880
7.1.1.2	Cooling capacity: 38~42 TR, COP Minimum 6.3 (W/W)	Each	92,722.00	2411851	2411851	2411851
7.1.1.3	Cooling capacity: 475~525 TR, COP Minimum 6.3 (W/W)	Each	24,969,750.00	24969276	24969276	24969276
7.1.1.4	Cooling capacity: 57~63 TR, COP Minimum 6.3 (W/W)	Each	25,302,680.00	2532200	2532200	2532200
7.1.1.5	Cooling capacity: 67~73 TR, COP Minimum 6.3 (W/W)	Each	25,635,610.00	25635124	25635124	25635124
7.1.1.6	Cooling capacity: 77~83 TR, COP Minimum 6.3 (W/W)	Each	26,301,470.00	263971	263971	263971
7.1.1.7	Cooling capacity: 87~93 TR, COP Minimum 6.3 (W/W)	Each	29,131,375.00	2913822	2913822	2913822
7.1.1.8	Cooling capacity: 97~13 TR, COP Minimum 6.3 (W/W)	Each	30,796,025.00	379544	379544	379544
7.1.2	Water Cooled VFD Fitted Dual Circuit Multiple Screw Compressor Chiller					
	Supply, installation, testing and commissioning of AHRI/EUROVENT Certified Water Cooled Horizontal Screw type Chiller having capacity of not less than below mentioned actual capacities at design condition with multiple independent refrigeration circuits with multiple compressors and inbuilt/ factory fitted VFDs, when condenser water entering at 32 deg C and leaving at 38 deg C .					
	The chilled water entering at 12 deg. C and leaving at 7 deg C. The unit shall use Internationally accepted & recommended gas (CFC free with zero ozone depleting potential level) as refrigerant.					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	The full load (1%) power consumption shall not be more than .6 kW/Ton at AHRI Condition and .7 kw/Ton at design Condition. The cooler shall have water side fouling factor of .1 hr-sq ft-deg F/Btu and the condenser shall have water side fouling factor of .25 hr-sq ft-deg F/Btu. The water pressure drop in cooler and condenser shall not exceed 1 ft. WG. The unit shall be complete with microprocessor based control panel with option for remote control via BACnet. Evaporator shall be shell and tube type, condenser tube shall be made of copper, condenser fins shall be made of aluminium. The capacity control shall be fully automatic and based on chilled water inlet temperature. each unit shall be factory assembled, wired and tested. The supply power shall be 415+/-1% V, 5 Hz, 3 Ph power. The power for controls shall be 22v~25v/1ph/5Hz power. Units shall conform to detail technical specification & as per direction of Engineer-in-charge. The performance of chiller shall be rated in accordance with AHRI/Euro Vent latest version standard. Chiller shall be BACnet IP compatible Chilled water inlet/outlet Temp : 12 / 7 deg. C Condenser water inlet/outlet Temp : 32 /38 deg. C (But it may vary according to location/temperature of particular region) Max. pressure drop for Evaporator : 1 Ft of water Pressure Vessel Code : ASME or PED Refrigerant: Internationally accepted & recommended gas (CFC free) Compressor type: Semi Hermatic Screw Type Total No. of Compressor: Minimum 2 Nos Starter : VFD No. of Independent Refrigeration Circuits: 2 Nos Country Of Origin, manufacturing and shipment: USA/UK/EU/Japan					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.1.2.1	Cooling capacity: 9~11 TR, COP Minimum 4.7 (W/W)	Each	7,803,047.00	782899	782899	782899
7.1.2.2	Cooling capacity: 135~165 TR, COP Minimum 4.7 (W/W)	Each	-	9363478	9363478	9363478
7.1.2.3	Cooling capacity: 18~22 TR, COP Minimum 5.4 (W/W)	Each	12,484,875.00	12484638	12484638	12484638
7.1.2.4	Cooling capacity: 285~315 TR, COP Minimum 5.4 (W/W)	Each	17,876,071.00	17875731	17875731	17875731
7.1.2.5	Cooling capacity: 38~42 TR, COP Minimum 5.4 (W/W)	Each	23,834,762.00	2383439	2383439	2383439
7.1.2.6	Cooling capacity: 475~525 TR, COP Minimum 5.75 (W/W)	Each	28,874,111.00	28873563	28873563	28873563
7.1.2.7	Cooling capacity: 57~63 TR, COP Minimum 5.75 (W/W)	Each	31,582,951.00	31582352	31582352	31582352
7.1.2.8	Cooling capacity: 67~73 TR, COP Minimum 5.75 (W/W)	Each	37,454,625.00	37453914	37453914	37453914
7.1.2.9	Cooling capacity: 77~83 TR, COP Minimum 5.75 (W/W)	Each	44,945,551.00	44944698	44944698	44944698
7.1.2.1	Cooling capacity: 87~93 TR, COP Minimum 5.75 (W/W)	Each	54,101,126.00	54199	54199	54199

7.11 AIR COOLED SCREW CHILLERS : AHRI/EUROVENT CERTIFIED
Multiple Circuits Air Cooled Screw Chiller With VFD Starter :

Supply, installation, testing and commissioning of AHRI/EUROVENT Certified Screw compression type air-cooled water chiller having capacity as mentioned below and to cool water from 12.°C to 7.°C at condenser air entering temperature of 38°C. Water side fouling factor should not exceed .1 sq.ft.-F-hr/Btu. The unit shall have at least 2 (two) compressors with minimum two independent refrigerant circuits. The unit shall have evaporator, condenser, economizer, refrigerant filter, service valves, safety controls, electronic expansion valve, control switches, isolators, etc. all completed with necessary wiring, piping & factory tested.

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	The compressor shall be direct driven semi- hermetic screw compressor, with capacity control slide valve, load/unload valve, rolling element bearings, evaporator shall be shell and tube type, condenser tube shall be made of copper, condenser fins shall be made of aluminium, differential pressure oil pump, oil heater, suction gas cooled hermetically sealed squirrel cage induction motor, etc. The unit control panel shall be microprocessor based factory installed and tested. The unit casing shall be weather proof. The performance of chiller shall be rated in accordance with AHRI/Euro Vent latest version standard. Refrigerant will be Internationally accepted & recommended gas (CFC free with zero ozone depleting potential level). Chiller shall be BACnet IP compatible Chilled Water Inlet Temp : 12. deg C Chilled Water Outlet Temp : 7. deg C Ambient Air Temp : 4 deg C No. of Compressor : 2 Nos. (Minimum One at each Refrigeration Circuits) No. of Independent Ref. Ckt : 2 No. Starter : VFD Power input source : 415+/-1% V, 5 Hz, 3 Ph Country Of Origin, manufacturing and shipment: USA/UK/EU/Japan					
7.11.1	Cooling Capacity : 9~11 TR, COP Minimum 2.9 (W/W)	Each	8,157,731.00	8157576	8157576	8157576
7.11.2	Cooling Capacity : 115~135 TR, COP Minimum 2.9 (W/W)	Each	9,400,985.00	9487	9487	9487
7.11.3	Cooling Capacity : 14~16 TR, COP Minimum 2.9 (W/W)	Each	9,789,277.00	978991	978991	978991
7.11.4	Cooling Capacity : 165~185 TR, COP Minimum 3.5 (W/W)	Each	11,420,823.00	114266	114266	114266
7.11.5	Cooling Capacity : 19~21 TR, COP Minimum 3.5 (W/W)	Each	13,052,369.00	1352122	1352122	1352122
7.11.6	Cooling Capacity : 24~26 TR, COP Minimum 3.5 (W/W)	Each	16,315,462.00	16315153	16315153	16315153
7.11.7	Cooling Capacity : 265~285 TR, COP Minimum 3.5 (W/W)	Each	17,166,703.00	17166378	17166378	17166378

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.11.8	Cooling Capacity : 29~31 TR, COP Minimum 3.5 (W/W)	Each	18,727,313.00	18726957	18726957	18726957
7.11.9	Cooling Capacity : 335~365 TR, COP Minimum 3.5 (W/W)	Each	21,848,532.00	21848116	21848116	21848116
7.11.1	Cooling Capacity : 385~415 TR, COP Minimum 3.5 (W/W)	Each	125,511.00	24969276	24969276	24969276
7.12	COOLING TOWER : OPEN TYPE: Supply, installation, testing and commissioning of Vertical discharge, induced draft, cross-flow cooling tower suitable to handle water entering at 38 C and leaving at 32°C at a design ambient wet bulb temperature of 29°C. The cold water basin and casing shall be constructed with fiberglass-reinforced polyester (FRP). Fasteners and all other associated hardware shall be constructed of 34 stainless steel. All other metal component such as supports, grilles or tower supports shall be constructed of hot-dipped galvanized steel. The cooling tower shall be complete with fan, motor, belt-drive, hot water distribution system consisting of sprinkler arm and sprinkler head, PVC fill, fill grid, float operated make-up valve, access door, ladder, bleed of assembly, drip eliminator, etc Speed of the fan shall not be more than 145 rpm. Power supply shall be 415+/-1% V / 3Ph / 5Hz. Cooling tower noise shall not be more than 65 dBA. Country Of Origin, manufacturing and shipment: EU/Japan/Malaysia					
7.12.1	125 TR; Flow Capacity : 375 US GPM	Set	709,368.00	79355	79355	79355
7.12.2	15 TR; Flow Capacity : 45 US GPM	Set	851,241.00	851226	851226	851226
7.12.3	175 TR; Flow Capacity : 525 US GPM	Set	993,115.00	99397	99397	99397
7.12.4	2 TR; Flow Capacity : 6 US GPM	Set	1,134,989.00	1134967	1134967	1134967
7.12.5	25 TR; Flow Capacity : 75 US GPM	Set	1,418,736.00	141879	141879	141879
7.12.6	3 TR; Flow Capacity : 9 US GPM	Set	1,581,418.00	1581388	1581388	1581388
7.12.7	35 TR; Flow Capacity : 15 US GPM	Set	1,986,230.00	1986192	1986192	1986192
7.12.8	4 TR; Flow Capacity : 12 US GPM	Set	2,269,977.00	2269934	2269934	2269934

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.12.9	45 TR; Flow Capacity : 135 US GPM	Set	-	2553676	2553676	2553676
7.12.1	5 TR; Flow Capacity : 15 US GPM	Set	-	2837418	2837418	2837418
7.12.11	55 TR; Flow Capacity : 165 US GPM	Set	125,511.00	32965	32965	32965
7.12.12	6 TR; Flow Capacity : 18 US GPM	Set	138,122.00	3129484	3129484	3129484
7.12.13	65 TR; Flow Capacity : 195 US GPM	Set	157,038.00	319668	319668	319668
7.12.14	7 TR; Flow Capacity : 21 US GPM	Set	174,946.00	3528992	3528992	3528992
7.12.15	75 TR; Flow Capacity : 225 US GPM	Set	197,393.00	3695453	3695453	3695453
7.12.16	8 TR; Flow Capacity : 24 US GPM	Set	-	478315	478315	478315
7.12.17	9 TR; Flow Capacity : 27 US GPM	Set	188,566.00	4596617	4596617	4596617
7.12.18	1 TR; Flow Capacity : 3 US GPM	Set	207,482.00	517352	517352	517352
7.12.19	11 TR; Flow Capacity : 33 US GPM	Set	-	561888	561888	561888
7.12.2	12 TR; Flow Capacity : 36 US GPM	Set	6,128,939.00	6128823	6128823	6128823
7.12.21	13 TR; Flow Capacity : 39 US GPM	Set	6,344,587.00	6344467	6344467	6344467
7.12.22	14 TR; Flow Capacity : 42 US GPM	Set	6,658,600.00	6658474	6658474	6658474
7.12.23	15 TR; Flow Capacity : 45 US GPM	Set	7,150,428.00	715293	715293	715293
7.12.24	16 TR; Flow Capacity : 48 US GPM	Set	7,627,124.00	7626979	7626979	7626979
7.12.25	18 TR; Flow Capacity : 54 US GPM	Set	8,171,918.00	8171763	8171763	8171763
7.12.26	2 TR; Flow Capacity : 6 US GPM	Set	9,079,909.00	979737	979737	979737
7.12.27	22 TR; Flow Capacity : 66 US GPM	Set	9,987,900.00	998771	998771	998771
7.12.28	24 TR; Flow Capacity : 72 US GPM	Set	10,351,096.00	135900	135900	135900
7.12.29	25 TR; Flow Capacity : 75 US GPM	Set	125,511.00	1719133	1719133	1719133
7.12.3	28 TR; Flow Capacity : 84 US GPM	Set	11,349,887.00	11349672	11349672	11349672
7.12.31	3 TR; Flow Capacity : 9 US GPM	Set	11,665,161.00	1166494	1166494	1166494
7.13	WATER PUMP SET INCLUDING ACCESSORIES					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installation, testing and commissioning of End Suction Vertical Discharge/ Horizontal Split Case Centrifugal Pumps as per following capacities and specifications. each pump set shall be complete with integrally coupled electrical motor (suitable for VFD) of appropriate capacity, VFD, flexible coupling, spacer units, shaft cover, support base and all other standard components. The motor shall comply at least IE-3 efficiency standard. Efficiency not less than 87% according to IEC 634-2-1:214. Temperature Class B, Insulation Class F at least IP 65. The speed of the motor shall not exceed 1,5 rpm. The supply power shall be 415+/-1% V- 3Ph-5Hz. The unit shall conform to detail technical specification. each unit shall be complete with Inertia Block and Seismic Restraint type Vibration isolators. (Country of Origin, Manufacture, Shipment : USA/ UK/ EU/ Japan/ Malaysia/Singapore)					
7.13.1	End Suction Vertical Discharge Centrifugal Pump :					
7.13.1.1	Water Flow Rate : 2 USGPM; Head : 1 m	Set	252,220.00	252215	252215	252215
7.13.1.2	Water Flow Rate : 2 USGPM; Head : 15 m	Set	271,136.00	27114	27114	27114
7.13.1.3	Water Flow Rate : 3 USGPM; Head : 2 m	Set	378,330.00	378323	378323	378323
7.13.1.4	Water Flow Rate : 5 USGPM; Head : 25 m	Set	599,022.00	5991	5991	5991
7.13.1.5	Water Flow Rate : 1 USGPM; Head : 25 m	Set	138,122.00	819699	819699	819699
7.13.1.6	Water Flow Rate : 15 USGPM; Head : 3 m	Set	977,351.00	977333	977333	977333
7.13.1.7	Water Flow Rate : 2 USGPM; Head : 3 m	Set	1,128,683.00	1128661	1128661	1128661
7.13.1.8	Water Flow Rate : 25 USGPM; Head : 35 m	Set	1,235,877.00	1235854	1235854	1235854
7.13.1.9	Water Flow Rate : 25 USGPM; Head : 3 m	Set	1,198,044.00	11983	11983	11983
7.13.2	End Suction Vertical Discharge Centrifugal Pump / Horizontal Split Case Pump:					
7.13.2.1	Water Flow Rate : 3 USGPM; Head : 4 m	Set	1,374,597.00	1374571	1374571	1374571
7.13.2.2	Water Flow Rate : 3 USGPM; Head : 3 m	Set	1,324,153.00	1324128	1324128	1324128
7.13.2.3	Water Flow Rate : 35 USGPM; Head : 35 m	Set	1,488,096.00	148868	148868	148868

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.13.2.4	Water Flow Rate : 35 USGPM; Head : 4 m	Set	157,038.00	1544816	1544816	1544816
7.13.2.5	Water Flow Rate : 4 USGPM; Head : 35 m	Set	1,607,901.00	16787	16787	16787
7.13.2.6	Water Flow Rate : 4 USGPM; Head : 45 m	Set	1,683,566.00	1683535	1683535	1683535
7.13.2.7	Water Flow Rate : 45 USGPM; Head : 35 m	Set	1,727,705.00	1727672	1727672	1727672
7.13.2.8	Water Flow Rate : 45 USGPM; Head : 45 m	Set	1,828,593.00	1828558	1828558	1828558
7.13.2.9	Water Flow Rate : 5 USGPM; Head : 4 m	Set	1,879,037.00	1880	1880	1880
7.13.2.1	Water Flow Rate : 5 USGPM; Head : 5 m	Set	1,973,619.00	1973582	1973582	1973582
7.13.2.11	Water Flow Rate : 55 USGPM; Head : 4 m	Set	2,011,452.00	211414	211414	211414
7.13.2.12	Water Flow Rate : 55 USGPM; Head : 5 m	Set	2,112,340.00	2112300	2112300	2112300
7.13.2.13	Water Flow Rate : 6 USGPM; Head : 5 m	Set	2,206,922.00	22689	22689	22689
7.14	EXPANSION TANK (CLOSED TYPE) with Dynamic Pressurization System : Supply and installation of closed type Expansion Tank having connection for pipes, feed water line, overflow line, drain line, make-up water pump(s) etc. complete in all respect. The tank shall be capable of withstanding 25 psig. The tank shall be insulated with 8mm thick PE insulation. (Country of Origin, Manufacture : USA/ UK/ EU/ Japan/ Malaysia)					
7.14.1	Capacity : 5 L	Each	630,549.00	63537	63537	63537
7.14.2	Capacity : 1 L	Each	819,714.00	819699	819699	819699
7.14.3	Capacity : 15 L	Each	945,824.00	94586	94586	94586
7.14.4	Capacity : 2 L	Each	1,040,406.00	14386	14386	14386
7.14.5	Capacity : 25 L	Each	1,103,461.00	113440	113440	113440
7.14.6	Capacity : 3 L	Each	1,172,822.00	1172799	1172799	1172799
7.14.7	Capacity : 35 L	Each	1,216,960.00	1216937	1216937	1216937
7.14.8	Capacity : 4 L	Each	1,254,793.00	1254769	1254769	1254769
7.15	WATER TREATMENT SYSTEM :					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installation, testing and commissioning of Chemical Pot Feeder complete with necessary chemicals for treatment of chilled water and condenser water in order to control growth of algae, bacteria, biological components and control of corrosion of pipe surfaces. The offer shall include all types of chemicals required for effective operation of the Air Conditioning Plant for a period of at least 2 (two) years. (Country of Origin, Manufacture, shipment : USA/ UK/ EU/ Japan/ Malaysia)					
7.15.1	Upto 5 TR System :					
7.15.1.1	Pot Feeder and chemicals for treatment of Chilled Water	Set	945,824.00	94586	94586	94586
7.15.1.2	Pot Feeder and chemicals for treatment of Condenser Water	Set	1,513,318.00	1513289	1513289	1513289
7.15.2	51-1 TR System :					
7.15.2.1	Pot Feeder and chemicals for treatment of Chilled Water	Set	1,198,044.00	11983	11983	11983
7.15.2.2	Pot Feeder and chemicals for treatment of Condenser Water	Set	1,891,648.00	1891613	1891613	1891613
7.15.3	11-15 TR System :					
7.15.3.1	Pot Feeder and chemicals for treatment of Chilled Water	Set	1,450,263.00	145236	145236	145236
7.15.3.2	Pot Feeder and chemicals for treatment of Condenser Water	Set	-	2269934	2269934	2269934
7.15.4	151-2 TR System :					
7.15.4.1	Pot Feeder and chemicals for treatment of Chilled Water	Set	1,576,373.00	1576344	1576344	1576344
7.15.4.2	Pot Feeder and chemicals for treatment of Condenser Water	Set	2,648,307.00	2648257	2648257	2648257
7.15.5	21-25 TR System :					
7.15.5.1	Pot Feeder and chemicals for treatment of Chilled Water	Set	1,702,483.00	17245	17245	17245
7.15.5.2	Pot Feeder and chemicals for treatment of Condenser Water	Set	3,026,636.00	326579	326579	326579
7.15.6	251-3 TR System :					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.15.6.1	Pot Feeder and chemicals for treatment of Chilled Water	Set	1,828,593.00	1828558	1828558	1828558
7.15.6.2	Pot Feeder and chemicals for treatment of Condenser Water	Set	3,531,076.00	35319	35319	35319
7.16	CHILLED WATER FAN COIL UNIT (FCU)					
7.16.1	DUCTED TYPE FAN COIL UNIT (FCU) Supply, installation, testing and commissioning of Ceiling Mount Hideaway type Chilled Water Fan Coil Units having cooling capacities as mentioned below. each unit shall be complete with chilled water cooling coils, centrifugal fan, insulated condensate tray (extended over the length of valve connections), air filter (G3 Standard), thermostat, control cables, 3-speed control switch etc. complete in all respect. The unit shall be complete with microprocessor based control panel with option for remote control via BACnet. The unit shall operate when supplied with 23V±1%V -1Ph-5Hz power. Chilled Water Inlet : 7 deg C and Outlet : 12 deg C. - Entering air temperature : DB 25.24° C/WB 19.5 °C - Leaving Air temperature : DB 13.5 °C/WB 13.22° C or as per Engineer-in-charge's design. (Country of Origin, Manufacture : USA/ UK/ EU/ Japan/ Malaysia/ Thailand)					
7.16.1.1	Total cooling capacity : 12, Btu/hr Sensible cooling capacity : 9, Btu/hr Air Flow : 4 cfm Sound Level: Maximum 46 dB ESP : .25" WG	Each	44,769.00	44768	44768	44768
7.16.1.2	Total cooling capacity : 18, Btu/hr Sensible cooling capacity : 13,5 Btu/hr Air Flow : 6 cfm Sound Level: Maximum 5 dB					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	ESP : .25" WG	Each	47,606.00	4765	4765	4765
7.16.1.3	Total cooling capacity : 24, Btu/hr Sensible cooling capacity : 18, Btu/hr Air Flow : 8 cfm Sound Level: Maximum 5 dB ESP : .3" WG	Each	50,444.00	5443	5443	5443
7.16.1.4	Total cooling capacity : 3, Btu/hr Sensible cooling capacity : 22,5 Btu/hr Air Flow : 1, cfm Sound Level: Maximum 5 dB ESP : .3" WG	Each	57,380.00	57379	57379	57379
7.16.1.5	Total cooling capacity : 36, Btu/hr Sensible cooling capacity : 27, Btu/hr Air Flow : 1,2 cfm Sound Level: Maximum 51 dB ESP : .3" WG	Each	63,055.00	6353	6353	6353
7.16.1.6	Total cooling capacity : 42, Btu/hr Sensible cooling capacity : 31,5 Btu/hr Air Flow : 1,4 cfm Sound Level: Maximum 52 dB ESP : .3" WG	Each	68,730.00	68728	68728	68728
7.16.1.7	Total cooling capacity : 48, Btu/hr Sensible cooling capacity : 36, Btu/hr Air Flow : 1,6 cfm Sound Level: Maximum 54 dB					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	ESP : .3" WG	Each	75,666.00	75665	75665	75665
7.16.1.8	Total cooling capacity : 6, Btu/hr Sensible cooling capacity : 45, Btu/hr Air Flow : 2, cfm Sound Level: Maximum 54 dB ESP : .5" WG	Each	207,482.00	88275	88275	88275
7.16.1.9	Total cooling capacity : 72, Btu/hr Sensible cooling capacity : 54, Btu/hr Air Flow : 2,4 cfm Sound Level: Maximum 62 dB ESP : .5" WG	Each	101,518.00	11517	11517	11517
7.16.2	CHILLED WATER CASSETTE TYPE FAN COIL UNIT (FCU) Supply, installation, testing and commissioning of Ceiling Mount Hideaway type Chilled Water Fan Coil Units having cooling capacities as mentioned below. each unit shall be complete with chilled water cooling coils, centrifugal fan, insulated condensate tray (extended over the length of valve connections), air filter (G3 Standard), thermostat, control cables, 3-speed control switch etc. complete in all respect. The unit shall operate when supplied with 23V±1%V -1Ph-5Hz power. Chilled Water Inlet : 7 deg C and Outlet : 12 deg C. - Entering air temperature : DB 25.24° C/WB 19.5° C - Leaving Air temperature : DB 13.5° C/WB13.22 °C or as per Engineer-in-charge's design. (Country of Origin, Manufacture : USA/ UK/ EU/ Japan/ Malaysia/ Thailand)					
7.16.2.1	Total cooling capacity : 12, Btu/hr Sensible cooling capacity : 9, Btu/hr Air Flow : 4 cfm	Each	56,749.00	56748	56748	56748

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.16.2.2	Total cooling capacity : 18, Btu/hr Sensible cooling capacity : 13,5 Btu/hr Air Flow : 6 cfm	Each	63,055.00	6353	6353	6353
7.16.2.3	Total cooling capacity : 24, Btu/hr Sensible cooling capacity : 18, Btu/hr Air Flow : 8 cfm	Each	70,622.00	762	762	762
7.16.2.4	Total cooling capacity : 3, Btu/hr Sensible cooling capacity : 22,5 Btu/hr Air Flow : 1, cfm	Each	78,188.00	78187	78187	78187
7.16.2.5	Total cooling capacity : 36, Btu/hr Sensible cooling capacity : 27, Btu/hr Air Flow : 1,2 cfm	Each	87,016.00	8714	8714	8714
7.16.2.6	Total cooling capacity : 42, Btu/hr Sensible cooling capacity : 31,5 Btu/hr Air Flow : 1,4 cfm	Each	94,582.00	9459	9459	9459
7.17	Chilled Water Air Handling Unit (AHU):					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.17.1	Chilled water air-handling unit shall be floor/ceiling mountable, horizon/vertical, double skin, draw through type having capacities as mentioned below. The AHU shall be constructed with thermal-Break profile and panel thickness shall not be less than 5 mm. Outer skins made of pre-painted galvanized steel sheet .6 mm thickness and Inner skins made of galvanized steel sheet .6mm thickness or stainless steel based on application. The unit performance shall be certified under EUROVENT / AHRI CERTIFICATION programme for air-handling units. each unit shall be complete with centrifugal/plug fan(s) with motor, air-diffuser, cooling coil(s), washable filter(s), drain pan, vibration isolator, mixing box, return, bypass and fresh air volume control damper, flexible connector, flexible electrical wiring, inspection light. view panel, etc. Fan(s) shall be of belt / direct driven type and shall be selected at higher efficiency and acceptable sound level to achieve standard noise level in conditioned space. Motor shall be totally enclosed, squirrel cage induction type and insulation shall be of class F, IP55 Fan discharge velocity shall not be more than 17 ft/min. Power supply shall be 415±1%V/3Ph/5Hz . Chilled water enters the coil at 7°C and leaves at 12°C. Cooling coil shall not be less than 4 row depth with 1 fins per inch. Face velocity shall not be more than 45 ft/min. Water pressure drop inside coil shall not more than 1 ft. of W.G. The arrangement of fan, coils, mixing, bypass, filters, etc. shall be as shown in AHU schematic drawings. Fan ESP given is excluding pressure drop of coils, filters, dampers within & attached to the unit. Layoot : Mixing Box with Two Dampers + Washable G4 Filter + Minimum 4 Row Cooling Coil + Fan: (Country of Origin, Manufacture : USA/ UK/ EU/ Japan/ Malaysia/ Thailand) Air Flow Rate : 3 cfm; Minimum : 7.5 TR,					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Cooling Coil : - Entering air temperature : DB 25.24 C/WB 19.5 C - Leaving Air temperature : DB 13.5 C/WB13.22 C ESP : 3 Pa.	Each	206,221.00	51736	51736	51736
7.17.2	Air Flow Rate : 4 cfm; Minimum : 1 TR, Cooling Coil : - Entering air temperature : DB 25.24 C/WB 19.5 C - Leaving Air temperature : DB 13.5 C/WB13.22 C ESP : 35 Pa.	Each	235,226.00	6899	6899	6899
7.17.3	Air Flow Rate : 5 cfm; Minimum : 13 TR, Cooling Coil : - Entering air temperature : DB 25.24 C/WB 19.5 C - Leaving Air temperature : DB 13.5 C/WB13.22 C ESP : 5 Pa.	Each	-	851226	851226	851226
7.17.4	Air Flow Rate : 6 cfm; Minimum : 15 TR, Cooling Coil : - Entering air temperature : DB 25.24 C/WB 19.5 C - Leaving Air temperature : DB 13.5 C/WB13.22 C ESP : 5 Pa.	Each	227,660.00	12148	12148	12148
7.17.5	Air Flow Rate : 7 cfm; Minimum : 18 TR, Cooling Coil : - Entering air temperature : DB 25.24 C/WB 19.5 C - Leaving Air temperature : DB 13.5 C/WB13.22 C ESP : 6 Pa.	Each	240,271.00	1112268	1112268	1112268
7.17.6	Air Flow Rate : 8 cfm; Minimum : 2 TR, Cooling Coil : - Entering air temperature : DB 25.24 C/WB 19.5 C - Leaving Air temperature : DB 13.5 C/WB13.22 C ESP : 6 Pa.	Each	254,143.00	118365	118365	118365
7.17.7	Air Flow Rate : 9 cfm; Minimum : 23 TR, Cooling Coil : - Entering air temperature : DB 25.24 C/WB 19.5 C - Leaving Air temperature : DB 13.5 C/WB13.22 C					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	ESP : 6 Pa.	Each	275,582.00	1327911	1327911	1327911
7.17.8	Air Flow Rate : 1 cfm; Minimum : 25 TR, Cooling Coil : - Entering air temperature : DB 25.24 C/WB 19.5 C - Leaving Air temperature : DB 13.5 C/WB13.22 C ESP : 6 Pa.	Each	248,946.00	1475457	1475457	1475457
7.17.9	Air Flow Rate : 12 cfm; Minimum : 3 TR, Cooling Coil : - Entering air temperature : DB 25.24 C/WB 19.5 C - Leaving Air temperature : DB 13.5 C/WB13.22 C ESP : 1 Pa.	Each	206,221.00	177549	177549	177549
7.17.1	Air Flow Rate : 16 cfm; Minimum : 4 TR, Cooling Coil : - Entering air temperature : DB 25.24 C/WB 19.5 C - Leaving Air temperature : DB 13.5 C/WB13.22 C ESP : 1 Pa.	Each	2,360,776.00	236732	236732	236732
7.17.11	Air Flow Rate : 2 cfm; Minimum : 5 TR, Cooling Coil : - Entering air temperature : DB 25.24 C/WB 19.5 C - Leaving Air temperature : DB 13.5 C/WB13.22 C ESP : 1 Pa.	Each	2,950,970.00	295914	295914	295914
7.17.12	Air Flow Rate : 32 cfm; Minimum : 8 TR, Cooling Coil : - Entering air temperature : DB 25.24 C/WB 19.5 C - Leaving Air temperature : DB 13.5 C/WB13.22 C ESP : 2 Pa.	Each	3,957,327.00	3957252	3957252	3957252
7.17.13	Air Flow Rate : 4 cfm; Minimum : 1 TR, Cooling Coil : - Entering air temperature : DB 25.24 C/WB 19.5 C - Leaving Air temperature : DB 13.5 C/WB13.22 C ESP : 2 Pa.	Each	4,788,391.00	4788300	4788300	4788300

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.18	VALVES AND OTHER PIPE FITTINGS, METERING & MEASUREMENT DEVICES					
7.18.1	WATER VALVES					
	Supply, installation, testing and commissioning of steel/ cast iron Water Valves of different sizes for use in chilled water and condenser water pipe lines. The valves shall be flanged type for sizes upto and above Ø 2". Valve sizes below Ø 2" shall be threaded type. The unit shall conform to the detail technical specification and shall be complete with all standard fittings and accessories.					
	Country of Origin: USA/UK/ EU/Japan					
	Country of Manufacture : Malaysia/China					
7.18.1.1	Butterfly Valves					
	BFV-CI body, DI disc , multi flange connection, EPDM seat					
7.18.1.1.1	Ø 24"	Each	60,533.00	6531	6531	6531
7.18.1.1.2	Ø 2"	Each	50,444.00	5443	5443	5443
7.18.1.1.3	Ø 18"	Each	206,221.00	45399	45399	45399
7.18.1.1.4	Ø 16"	Each	40,355.00	4355	4355	4355
7.18.1.1.5	Ø 14"	Each	35,311.00	3540	3540	3540
7.18.1.1.6	Ø 12"	Each	30,266.00	3266	3266	3266
7.18.1.1.7	Ø 1"	Each	25,222.00	25222	25222	25222
7.18.1.1.8	Ø 8"	Each	16,647.00	16646	16646	16646
7.18.1.1.9	Ø 6"	Each	10,820.00	1820	1820	1820
7.18.1.1.1	Ø 4"	Each	9,988.00	9987	9987	9987
7.18.1.2	Motorized Butterfly Valves					
7.18.1.2.1	Ø 18"	Each	235,226.00	252215	252215	252215
7.18.1.2.2	Ø 16"	Each	226,998.00	226994	226994	226994
7.18.1.2.3	Ø 14"	Each	201,776.00	21772	21772	21772
7.18.1.2.4	Ø 12"	Each	176,554.00	17656	17656	17656

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.18.1.2.5	Ø 1"	Each	151,332.00	151329	151329	151329
7.18.1.2.6	Ø 8"	Each	126,110.00	12618	12618	12618
7.18.1.2.7	Ø 6"	Each	113,499.00	113496	113496	113496
7.18.1.2.8	Ø 4"	Each	100,888.00	1887	1887	1887
7.18.1.3	Gate Valves					
	Bronze gate valve. NRS Class 15 (Shell 35 PSIG, Seat 225 PSIG), BSPT connection					
7.18.1.3.1	Ø 3"	Each	-	14981	14981	14981
7.18.1.3.2	Ø 2.5"	Each	12,485.00	12485	12485	12485
7.18.1.3.3	Ø 2"	Each	6,305.00	635	635	635
7.18.1.3.4	Ø 1.5"	Each	4,994.00	4994	4994	4994
7.18.1.3.5	Ø 1.25"	Each	3,783.00	3784	3784	3784
7.18.1.3.6	Ø 1"	Each	2,522.00	2522	2522	2522
7.18.1.3.7	Ø 3/4"	Each	1,892.00	1893	1893	1893
7.18.1.4	Check Valves					
	D swing check valve, DI body, PN16 flange					
7.18.1.4.1	Ø 18"	Each	68,099.00	6898	6898	6898
7.18.1.4.2	Ø 16"	Each	227,660.00	6531	6531	6531
7.18.1.4.3	Ø 14"	Each	52,966.00	52966	52966	52966
7.18.1.4.4	Ø 12"	Each	45,400.00	45399	45399	45399
7.18.1.4.5	Ø 1"	Each	37,833.00	37832	37832	37832
7.18.1.4.6	Ø 8"	Each	30,266.00	3266	3266	3266
7.18.1.4.7	Ø 6"	Each	22,700.00	22699	22699	22699
7.18.1.4.8	Ø 4"	Each	15,133.00	15133	15133	15133
7.18.1.5	Ball Valves					
7.18.1.5.1	Ø 1"	Each	2,270.00	227	227	227
7.18.1.5.2	Ø .75"	Each	240,271.00	1766	1766	1766

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.18.1.6	Other Types					
7.18.1.6.1	Ø .5" Automatic Vent Valve	Each	4,162.00	4161	4161	4161
7.18.1.6.2	Ø .5" Drain Cock	Each	1,513.00	1513	1513	1513
7.18.2	BALANCING VALVES Supply, installation, testing and commissioning of STAD or Bell & Gosset type Balancing Valves complete with all accessories and components for balancing and recording of flow rates of chilled water and condenser water flow through pipes. Units shall conform to detail technical specification. Country of Origin: USA/UK/ EU/Japan Country of Manufacture : Malaysia/China					
7.18.2.1	Ø 12"	Each	302,664.00	32658	32658	32658
7.18.2.2	Ø 1"	Each	252,220.00	252215	252215	252215
7.18.2.3	Ø 8"	Each	226,998.00	226994	226994	226994
7.18.2.4	Ø 6"	Each	254,143.00	21772	21772	21772
7.18.2.5	Ø 4"	Each	74,909.00	7498	7498	7498
7.18.2.6	Ø 3"	Each	66,586.00	66585	66585	66585
7.18.2.7	Ø 2.5"	Each	41,616.00	41616	41616	41616
7.18.2.8	Ø 1.5"	Each	39,952.00	3996	3996	3996
7.18.3	PRESSURE INDEPENDENT BALANCING AND CONTROL VALVES (PIBCV) Supply, installation, testing and commissioning of Pressure Independent Balancing and Control Valves (PIBCV) as per following sizes including supply of all necessary hardwares and consumables. The unit shall conform to detail technical specification. Country of Origin, Manufacture, Shipment: USA/UK/ EU/Japan					
7.18.3.1	Ø 4"	Each	133,172.00	133169	133169	133169

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.18.3.2	Ø 3"	Each	116,526.00	116523	116523	116523
7.18.3.3	Ø 2.5"	Each	108,202.00	182	182	182
7.18.3.4	Ø 2"	Each	275,582.00	49938	49938	49938
7.18.3.5	Ø 1.5"	Each	46,610.00	4670	4670	4670
7.18.3.6	Ø 1.25"	Each	44,946.00	44945	44945	44945
7.18.3.7	Ø 1"	Each	14,982.00	14981	14981	14981
7.18.3.8	Ø .75"	Each	9,988.00	9987	9987	9987
7.18.4	Y-STRAINER					
	Supply, installation, testing and commissioning of Y-Strainers as per following sizes and shall be complete as per technical specification.					
	Country of Origin: USA/UK/ EU/Japan					
	Country of Manufacture : Malaysia/China					
7.18.4.1	Ø 14"	Each	85,755.00	85753	85753	85753
7.18.4.2	Ø 12"	Each	74,405.00	7444	7444	7444
7.18.4.3	Ø 4"	Each	25,222.00	25222	25222	25222
7.18.4.4	Ø 3"	Each	248,946.00	18285	18285	18285
7.18.4.5	Ø 2.5"	Each	11,791.00	11791	11791	11791
7.18.4.6	Ø 2"	Each	8,134.00	8133	8133	8133
7.18.4.7	Ø 1.5"	Each	5,612.00	5611	5611	5611
7.18.4.8	Ø 1.25"	Each	3,758.00	3758	3758	3758
7.18.4.9	Ø 1"	Each	2,711.00	2711	2711	2711
7.18.4.1	Ø .75"	Each	2,245.00	2245	2245	2245
7.18.5	FLEXIBLE PIPE CONNECTOR					
	Supply, installation, testing and commissioning of Flexible Pipe Connector as per following sizes and shall be complete as per technical specification.					
	Country of Origin: USA/UK/ EU/Japan					
	Country of Manufacture : Malaysia/China					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.18.5.1	Ø 14"	Each	69,335.00	69334	69334	69334
7.18.5.2	Ø 12"	Each	Unit Rate(Say)(Tk	56560	56560	56560
7.18.5.3	Ø 1"	Each	-	4386	4386	4386
7.18.5.4	Ø 8"	Each	260,448.00	29963	29963	29963
7.18.5.5	Ø 6"	Each	285,670.00	2459	2459	2459
7.18.5.6	Ø 4"	Each	285,670.00	18513	18513	18513
7.18.5.7	Ø 3"	Each	304,587.00	14478	14478	14478
7.18.5.8	Ø 2.5"	Each	297,497.00	1116	1116	1116
7.18.5.9	Ø 2"	Each	361,336.00	8197	8197	8197
7.18.5.1	Ø 1.5"	Each	-	6558	6558	6558
7.18.5.11	Ø 1.25"	Each	314,186.00	4792	4792	4792
7.18.5.12	Ø 1"	Each	-	3784	3784	3784
7.18.5.13	Ø .75"	Each	3,153.00	3154	3154	3154
7.18.6	METERING DEVICES Supply, installation, testing and commissioning of following Metering Devices as per detail technical specification. Country of Origin: USA/UK/ EU/Japan Country of Manufacture : Malaysia/China					
7.18.6.1	Pipe Thermometers (scale casing, aluminium, anodized material, stem length brass material, BSP connection (straight type) (Ranges: ~ 65°C)	Each	4,036.00			
				436	436	436
7.18.6.2	Pressure Gauges (minimum 4" Dial, 3/8" BSP bottom connection) (Ranges: ~ 2, kPa)	Each	5,044.00			
				545	545	545
7.18.7	AIR SEPARATOR Supply, installation, testing and commissioning of Air Separator as per following capacities. The unit shall conform to detail technical specification.					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	These Air separators should create a low velocity vortex that separates and removes entrained air from fluids circulating in closed, heating and chilled water systems with 34 stainless steel strainer to collect unwanted system debris. Should eliminates 99% of Entrained Air During First Pass. Working Pressures 1~3 PSIG. Max. Operating Temperature: 35° F					
	Country of Origin, Manufacture: USA/UK/ EU/Japan					
7.18.7.1	Capacity : 5 US Gpm	Set	599,274.00	599262	599262	599262
7.18.7.2	Capacity : 1 US Gpm	Set	832,325.00	83239	83239	83239
7.18.7.3	Capacity : 15 US Gpm	Set	260,448.00	915540	915540	915540
7.18.7.4	Capacity : 2 US Gpm	Set	1,198,044.00	11983	11983	11983
7.18.7.5	Capacity : 25 US Gpm	Set	1,365,013.00	1364987	1364987	1364987
7.18.7.6	Capacity : 3 US Gpm	Set	1,531,478.00	1531449	1531449	1531449
7.18.7.7	Capacity : 35 US Gpm	Set	1,747,883.00	1747849	1747849	1747849
7.18.7.8	Capacity : 4 US Gpm	Set	1,997,580.00	1997542	1997542	1997542
7.18.7.9	Capacity : 45 US Gpm	Set	2,330,510.00	233466	233466	233466
7.19	LOUVER, DIFFUSER & GRILLE					
	Supply, installation, testing & commissioning of Louver, Diffuser, Damper & Grille with complete all necessary accessories and fittings, Fixing for commissioning of the equipment as follows technical specification, drawing and time to time site instruction by the Engineer-in-charge.					
	All Louver/Grill shall be constructed with extruded aluminium with powder coat paint finish complete with face margin and fixing accessories. Neck velocity shall not be more than 5 ft/min at a pressure drop of .8 inch WC.					
	Country of Manufacture : Malaysia/China					
7.19.1	Exhaust Air Louver:					
7.19.1.1	25 x 2 mm	Each	285,670.00	217	217	217

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.19.1.2	45 x 2 mm	Each	3,632.00	3632	3632	3632
7.19.1.3	45 x 25 mm	Each	4,086.00	486	486	486
7.19.1.4	45 x 3 mm	Each	4,903.00	493	493	493
7.19.1.5	5 x 2 mm	Each	4,086.00	486	486	486
7.19.1.6	6 x 3 mm	Each	5,811.00	582	582	582
7.19.1.7	65 x 25 mm	Each	5,902.00	592	592	592
7.19.1.8	8 x 3 mm	Each	7,748.00	7749	7749	7749
7.19.1.9	85 x 2 mm	Each	5,488.00	5489	5489	5489
7.19.1.1	85 x 35 mm	Each	9,605.00	964	964	964
7.19.1.11	9 x 4 mm	Each	285,670.00	11486	11486	11486
7.19.1.12	95 x 35 mm	Each	10,654.00	1653	1653	1653
7.19.1.13	12 x 2 mm	Each	7,748.00	7749	7749	7749
7.19.1.14	12 x 35 mm	Each	13,151.00	1316	1316	1316
7.19.1.15	12 x 4 mm	Each	14,074.00	1474	1474	1474
7.19.1.16	155 x 25 mm	Each	13,317.00	13317	13317	13317
7.19.1.17	21 x 45 mm	Each	22,881.00	22881	22881	22881
7.19.2	Fresh Air Louver :					
7.19.2.1	4 x 2 mm	Each	3,228.00	3229	3229	3229
7.19.2.2	4 x 25 mm	Each	304,587.00	436	436	436
7.19.2.3	45 x 2 mm	Each	3,632.00	3632	3632	3632
7.19.2.4	45 x 25 mm	Each	4,086.00	486	486	486
7.19.2.5	75 x 35 mm	Each	8,656.00	8656	8656	8656
7.19.2.6	85 x 35 mm	Each	9,605.00	964	964	964
7.19.2.7	9 x 35 mm	Each	10,154.00	1154	1154	1154
7.19.2.8	9 x 4 mm	Each	11,486.00	11486	11486	11486
7.19.2.9	12 x 35 mm	Each	13,151.00	1316	1316	1316
7.19.2.1	12 x 4 mm	Each	14,074.00	1474	1474	1474
7.19.2.11	15 x 55 mm	Each	19,976.00	19975	19975	19975
7.19.2.12	16 x 6 mm	Each	297,497.00	23244	23244	23244

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.19.2.13	165 x 55 mm	Each	21,973.00	21973	21973	21973
7.19.2.14	17 x 6 mm	Each	24,697.00	24697	24697	24697
7.19.2.15	22 x 8 mm	Each	42,615.00	42614	42614	42614
7.19.3	Exhaust Air Grill :					
7.19.3.1	3 x 25 mm	Each	3,027.00	327	327	327
7.19.3.2	45 x 2 mm	Each	3,425.00	3425	3425	3425
7.19.3.3	75 x 5 mm	Each	6,326.00	6326	6326	6326
7.19.3.4	8 x 3 mm	Each	7,748.00	7749	7749	7749
7.19.3.5	9 x 35 mm	Each	361,336.00	11299	11299	11299
7.19.3.6	9 x 14 mm	Each	19,809.00	1988	1988	1988
7.19.3.7	115 x 115 mm	Each	20,142.00	2141	2141	2141
7.19.3.8	12 x 9 mm	Each	16,480.00	16480	16480	16480
7.19.3.9	135 x 45 mm	Each	13,105.00	1315	1315	1315
7.19.3.1	16 x 65 mm	Each	15,814.00	15814	15814	15814
7.19.3.11	2 x 85 mm	Each	25,969.00	25968	25968	25968
7.19.3.12	185 x 9 mm	Each	25,469.00	25468	25468	25468
7.19.3.13	3 x 9 mm	Each	41,117.00	41116	41116	41116
7.19.3.14	3 x 2 mm	Each	91,389.00	91388	91388	91388
7.19.4	Fresh Air Grill :					
7.19.4.1	15 x 15 mm	Each	1,362.00	1362	1362	1362
7.19.4.2	25 x 1 mm	Each	1,513.00	1513	1513	1513
7.19.4.3	3 x 15 mm	Each	1,816.00	1816	1816	1816
7.19.4.4	3 x 2 mm	Each	2,421.00	2421	2421	2421
7.19.4.5	35 x 2 mm	Each	2,825.00	2825	2825	2825
7.19.4.6	4 x 2 mm	Each	3,228.00	3229	3229	3229
7.19.4.7	45 x 2 mm	Each	3,425.00	3425	3425	3425
7.19.4.8	45 x 25 mm	Each	3,592.00	3592	3592	3592
7.19.4.9	6 x 2 mm	Each	314,186.00	3925	3925	3925

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.19.4.1	7 x 7 mm	Each	7,990.00	800	800	800
7.19.4.11	8 x 3 mm	Each	3,995.00	3995	3995	3995
7.19.4.12	12 x 4 mm	Each	7,324.00	7325	7325	7325
7.19.4.13	12 x 9 mm	Each	16,480.00	16480	16480	16480
7.19.4.14	135 x 5 mm	Each	10,321.00	132	132	132
7.19.4.15	14 x 5 mm	Each	10,654.00	1653	1653	1653
7.19.4.16	15 x 5 mm	Each	11,486.00	11486	11486	11486
7.19.4.17	15 x 55 mm	Each	12,651.00	12651	12651	12651
7.19.4.18	16 x 55 mm	Each	13,484.00	13484	13484	13484
7.19.4.19	16 x 6 mm	Each	10.00	14648	14648	14648
7.19.4.2	165 x 5 mm	Each	321,773.00	12651	12651	12651
7.19.4.21	19 x 1 mm	Each	-	28965	28965	28965
7.19.5	Return Air Grill :					
7.19.5.1	12 x 11 mm	Each	676,336.00	11652	11652	11652
7.19.5.2	12 x 4 mm	Each	-	1474	1474	1474
7.19.5.3	12 x 12 mm	Each	703,090.00	2955	2955	2955
7.19.6	Supply Air Grill :					
7.19.6.1	25x2 mm	Each	321,773.00	217	217	217
7.19.6.2	45x25 mm	Each	4,540.00	4539	4539	4539
7.19.6.3	6x3 mm	Each	5,811.00	582	582	582
7.19.6.4	8x3 mm	Each	7,748.00	7749	7749	7749
7.19.6.5	9x25 mm	Each	9,080.00	980	980	980
7.19.6.6	12x15 mm	Each	7,264.00	7264	7264	7264
7.19.7	Air Diffuser With Damper :					
7.19.7.1	15x15 mm	Each	2,331.00	234	234	234
7.19.7.2	2x2 mm	Each	2,830.00	2829	2829	2829
7.19.7.3	25x25 mm	Each	-	3329	3329	3329

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.19.7.4	3x3 mm	Each	4,328.00	4328	4328	4328
7.19.7.5	35x35 mm	Each	5,327.00	5327	5327	5327
7.19.7.6	4x4 mm	Each	6,305.00	635	635	635
7.19.8	Air Round Diffuser :					
7.19.8.1	Dia 4 mm	Each	5,675.00	5675	5675	5675
7.19.8.2	Dia 35 mm	Each	5,044.00	545	545	545
7.19.8.3	Dia 3 mm	Each	4,414.00	4414	4414	4414
7.19.8.4	Dia 25 mm	Each	3,783.00	3784	3784	3784
7.19.9	Air Round Jet Diffuser :					
	The jet nozzle diffuser is made of high quality aluminium sheet. The jet can be adjusted as per direction.					
7.19.9.1	Dia 4 mm	Each	8,863.00	8863	8863	8863
7.19.9.2	Dia 35 mm	Each	7,602.00	762	762	762
7.19.9.3	Dia 3 mm	Each	6,971.00	6972	6972	6972
7.19.9.4	Dia 25 mm	Each	6,341.00	6342	6342	6342
7.19.1	Mechanical Constant Volume Box (CAV):					
7.19.1.1	2X1 mm	Each	12,611.00	1261	1261	1261
7.19.1.2	2X15 mm	Each	13,912.00	13912	13912	13912
7.19.1.3	25X2 mm	Each	-	15173	15173	15173
7.19.1.4	25X25 mm	Each	16,435.00	16434	16434	16434
7.19.1.5	3X2 mm	Each	17,267.00	17267	17267	17267
7.19.1.6	3X25 mm	Each	18,528.00	18528	18528	18528
7.19.1.7	4X15 mm	Each	19,668.00	19668	19668	19668
7.19.1.8	4X2 mm	Each	20,929.00	2929	2929	2929
7.19.1.9	4X25 mm	Each	23,451.00	2346	2346	2346
7.19.1.1	5X25 mm	Each	26,967.00	26967	26967	26967

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.19.11	Supply of Linear Slot Diffuser					
7.19.11.1	Size 2 x 2mm, 1.2 m Long	Each	676,336.00	467	467	467
7.19.11.2	Size 2 x 2mm, 1.5 m Long	Each	5,660.00	5660	5660	5660
7.19.11.3	Size 2 x 2mm, 2. m Long	Each	6,992.00	6992	6992	6992
7.19.11.4	Size 3 x 2mm, 2. m Long	Each	8,656.00	8656	8656	8656
7.19.12	Liner Grill : Made of extruded aluminium Fixed blades at degree, 15 degree, 3 degree rigid, heavy gauge extruded frames with reinforced mitered and welded corners. Standard finish white, other finishes are available as per design. Surface mounting or concealed mounting construction is of a fixed core.					
7.19.12.1	12x15 mm	Each	9,156.00	9155	9155	9155
7.19.12.2	12x25 mm	Each	10,487.00	1487	1487	1487
7.20	DAMPER					
7.2.1	Fire Damper Supply, installation, testing & commissioning of 1.5 Hours fire rating damper 2 GA .Interlocking steel blades UL listed fusible link (165oF standard)roll formed steel frame 2GA. Negator stainless steel closer spring. Country of Origin: USA/UK/ EU/Japan Country of Manufacture : Malaysia/India					
7.2.1.1	3 x 15 mm	Each	25,928.00	25928	25928	25928
7.2.1.2	55 x 25 mm	Each	30,922.00	3921	3921	3921
7.2.1.3	7 x 3 mm	Each	34,251.00	34251	34251	34251
7.2.1.4	7 x 35 mm	Each	35,084.00	3583	3583	3583
7.2.1.5	95 x 45 mm	Each	40,910.00	499	499	499
7.2.1.6	1 x 45 mm	Each	42,575.00	42574	42574	42574
7.2.2	Volume control Damper :					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply and installation of opposed blade type volume control damper constructed with 18 BWG sheet steel painted with two coats of synthetic black paint. The damper shall have adjustable locking arrangement with worm gear operable from outside duct work and shall be flanged end type suitable to mount on flanged end duct work. Volume control dampers shall be as per layout drawings and direction of Engineer-in-Charge.					
7.2.2.1	2 x 15 mm	Each	1,211.00	122	122	122
7.2.2.2	25 x 15 mm	Each	703,090.00	1513	1513	1513
7.2.2.3	3 x 15 mm	Each	1,816.00	1816	1816	1816
7.2.2.4	3 x 2 mm	Each	2,421.00	2421	2421	2421
7.2.2.5	35 x 15 mm	Each	2,119.00	2118	2118	2118
7.2.2.6	35 x 2 mm	Each	2,825.00	2825	2825	2825
7.2.2.7	4 x 2 mm	Each	3,228.00	3229	3229	3229
7.2.2.8	5 x 25 mm	Each	3,783.00	3784	3784	3784
7.2.2.9	65 x 25 mm	Each	4,918.00	4918	4918	4918
7.2.2.1	7 x 35 mm	Each	5,932.00	5933	5933	5933
7.2.2.11	8 x 35 mm	Each	6,780.00	6780	6780	6780
7.2.2.12	9 x 35 mm	Each	-	6992	6992	6992
7.2.2.13	95 x 45 mm	Each	8,626.00	8626	8626	8626
7.2.2.14	1 x 25 mm	Each	6,053.00	653	653	653
7.2.2.15	1 x 45 mm	Each	7,264.00	7264	7264	7264
7.2.2.16	1 x 125 mm	Each	20,178.00	2177	2177	2177
7.2.2.17	12 x 3 mm	Each	7,264.00	7264	7264	7264
7.2.2.18	12 x 45 mm	Each	10,896.00	1896	1896	1896
7.2.2.19	12 x 75 mm	Each	14,528.00	14528	14528	14528
7.2.2.2	13 x 3 mm	Each	7,869.00	7869	7869	7869
7.2.2.21	13 x 5 mm	Each	10,492.00	1493	1493	1493
7.2.2.22	145 x 55 mm	Each	-	12873	12873	12873

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.2.2.23	16 x 8 mm	Each	20,662.00	2661	2661	2661
7.2.2.24	25 x 11 mm	Each	36,400.00	364	364	364
7.2.3	Non Return Damper :					
7.2.3.1	7 x 35 mm	Each	4,414.00	4414	4414	4414
7.2.3.2	85 x 4 mm	Each	5,360.00	5360	5360	5360
7.2.3.3	9 x 5 mm	Each	5,675.00	5675	5675	5675
7.2.3.4	1 x 1 mm	Each	6,305.00	635	635	635
7.2.3.5	12 x 5 mm	Each	7,567.00	7566	7566	7566
7.2.3.6	125 x 9 mm	Each	-	8197	8197	8197
7.2.3.7	14 x 5 mm	Each	-	8827	8827	8827
7.2.3.8	145 x 8 mm	Each	62,456.00	9458	9458	9458
7.2.3.9	15 x 75 mm	Each	-	1719	1719	1719
7.2.3.1	16 x 6 mm	Each	72,545.00	11349	11349	11349
7.2.3.11	165 x 65 mm	Each	124,250.00	1198	1198	1198
7.2.3.12	17 x 7 mm	Each	-	1261	1261	1261
7.2.3.13	175 x 6 mm	Each	158,299.00	13872	13872	13872
7.21	VENTILATION FAN Supply, installation, testing & commissioning of Fan including non return damper with all necessary accessories and fittings, Fixing for commissioning of the equipment including all electrical & Civil works as follows technical specification, drawing and time to time site instruction from Engineer-in-charge. Country of Origin: USA/UK/ EU/Japan Country of Manufacture : Malaysia					
7.21.1	Exhaust Ventilation Fan (Wall Type): Fan shall be propeller/axial type					
7.21.1.1	Capacity : 5 cfm, ESP 3 Pa	Each	7,567.00	7566	7566	7566
7.21.1.2	Capacity : 1 cfm, ESP 3 Pa	Each	9,458.00	9458	9458	9458

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.21.1.3	Capacity : 2 cfm, ESP 3 Pa	Each	11,350.00	11349	11349	11349
7.21.1.4	Capacity : 25 cfm, ESP 3 Pa	Each	12,611.00	1261	1261	1261
7.21.1.5	Capacity : 3 cfm, ESP 3 Pa	Each	15,133.00	15133	15133	15133
7.21.1.6	Capacity : 35 cfm, ESP 3 Pa	Each	18,916.00	18916	18916	18916
7.21.1.7	Capacity : 4 cfm, ESP 3 Pa	Each	21,439.00	21438	21438	21438
7.21.1.8	Capacity : 45 cfm, ESP 3 Pa	Each	23,961.00	2396	2396	2396
7.21.1.9	Capacity : 55 cfm, ESP 3 Pa	Each	26,483.00	26483	26483	26483
7.21.1.1	Capacity : 6 cfm, ESP 3 Pa	Each	62,456.00	3266	3266	3266
7.21.1.11	Capacity : 75 cfm, ESP 5 Pa	Each	37,833.00	37832	37832	37832
7.21.1.12	Capacity : 8 cfm, ESP 5 Pa	Each	50,444.00	5443	5443	5443
7.21.1.13	Capacity : 1 cfm, ESP 5 Pa	Each	53,602.00	536	536	536
7.21.1.14	Capacity : 11 cfm, ESP 5 Pa	Each	53,602.00	536	536	536
7.21.1.15	Capacity : 12 cfm, ESP 5 Pa	Each	38,287.00	38286	38286	38286
7.21.1.16	Capacity : 14 cfm, ESP 5 Pa	Each	46,610.00	4670	4670	4670
7.21.1.17	Capacity : 17 cfm, ESP 5 Pa	Each	59,221.00	59220	59220	59220
7.21.2	Exhaust Ventilation Fan (Duct Type): Fan shall be centrifugal duct type					
7.21.2.1	Capacity : 2 cfm, ESP 1 Pa	Each	-	1261	1261	1261
7.21.2.2	Capacity : 3 cfm, ESP 1 Pa	Each	18,916.00	18916	18916	18916
7.21.2.3	Capacity : 35 cfm, ESP 1 Pa	Each	22,069.00	2268	2268	2268
7.21.2.4	Capacity : 4 cfm, ESP 1 Pa	Each	25,222.00	25222	25222	25222
7.21.2.5	Capacity : 6 cfm, ESP 2 Pa	Each	37,833.00	37832	37832	37832
7.21.2.6	Capacity : 65 cfm, ESP 2 Pa	Each	40,986.00	4985	4985	4985
7.21.2.7	Capacity : 7 cfm, ESP 2 Pa	Each	44,138.00	44138	44138	44138
7.21.2.8	Capacity : 75 cfm, ESP 2 Pa	Each	47,291.00	47290	47290	47290
7.21.2.9	Capacity : 1 cfm, ESP 3 Pa	Each	63,055.00	6353	6353	6353
7.21.2.1	Capacity : 12 cfm, ESP 5 Pa	Each	75,666.00	75665	75665	75665
7.21.2.11	Capacity : 15 cfm, ESP 5 Pa	Each	72,545.00	9459	9459	9459
7.21.2.12	Capacity : 2 cfm, ESP 5 Pa	Each	126,110.00	12618	12618	12618

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.21.2.13	Capacity : 3 cfm, ESP 5 Pa	Each	189,165.00	18917	18917	18917
7.21.2.14	Capacity : 4 cfm, ESP 5 Pa	Each	252,220.00	252215	252215	252215
7.21.2.15	Capacity : 5 cfm, ESP 5 Pa	Each	315,275.00	315269	315269	315269
7.21.2.16	Capacity : 6 cfm, ESP 5 Pa	Each	378,330.00	378323	378323	378323
7.21.2.17	Capacity : 8 cfm, ESP 5 Pa	Each	441,384.00	441376	441376	441376
7.21.2.18	Capacity : 12 cfm, ESP 5 Pa	Each	504,439.00	54429	54429	54429
7.21.2.19	Capacity : 2 cfm, ESP 5 Pa	Each	599,022.00	5991	5991	5991
7.21.2.2	Capacity : 25 cfm, ESP 5 Pa	Each	725,132.00	725118	725118	725118
7.21.3	Fresh Air Ventilation Fan (Duct Type): Supply, installation, testing & commissioning of Fan with DOL system including non return damper with all necessary accessories and fittings, Fixing for commissioning of the equipment including all electrical & Civil works as follows technical specification, drawing and time to time site instruction from Engineer-in-charge.					
7.21.3.1	Capacity : 7 cfm, ESP 1 Pa	Each	157,637.00	157634	157634	157634
7.21.3.2	Capacity : 11 cfm, ESP 1 Pa	Each	233,303.00	233299	233299	233299
7.21.3.3	Capacity : 11 cfm, ESP 5 Pa(Normal mode); 19, cfm @ 5 ESP(Emergency mode)	Each	315,275.00	315269	315269	315269
7.21.3.4	Capacity : 18 cfm, ESP 1 Pa	Each	346,802.00	346795	346795	346795
7.21.3.5	Capacity : 22 cfm, ESP 5 Pa (Normal mode); 38, cfm @ 5 ESP(Emergency mode)	Each	441,384.00	441376	441376	441376
7.21.4	Jet Fan : Supply, installation, testing & commissioning of Fan with VFD system including with all necessary accessories and fittings, Fixing for commissioning of the equipment including all electrical & Civil works as follows technical specification, drawing and time to time site instruction from Engineer-in-charge.					
7.21.4.1	Capacity : 2 cfm, ESP 3 Pa	Each	157,637.00	157634	157634	157634

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.21.4.2	Capacity : 4 cfm, ESP 3 Pa	Each	-	233299	233299	233299
7.22	PIPE & ACCESSORIES					
7.22.1	PRE-INSULATED PIPES					
	Supply, installation, testing and commissioning of Pre-Insulated Black Steel Pipes for all the chilled water piping system including cutting, edges preparation, welding, hanging etc. complete in all respect. The pipe shall be 4 Schedule Black Steel pipe and the insulation material shall be fibre glass/ polystyrene/ polyurethane of appropriate thickness and jacketed with galvanized steel.					
	Area where two pipe ends are to be joined and elbows, tees, reducers etc. shall be insulated by pre-formed fibre glass/ polyurethane insulation material and then jacketed. Pipe hanger/ isolator boxes with spring isolators, hanger rods, steel supports, all other materials and consumable in this connection shall be supplied by the Contractor under this head. The work shall be as per technical specification and sample approved by the Engineer-in-charge. .					
	Country of Origin, Manufacture: Malaysia/South Korea					
7.22.1.1	Ø 24"	Ft	14,142.00	14142	14142	14142
7.22.1.2	Ø 2"	Ft	12,364.00	12364	12364	12364
7.22.1.3	Ø 18"	Ft	11,026.00	1125	1125	1125
7.22.1.4	Ø 16"	Ft	9,761.00	976	976	976
7.22.1.5	Ø 14"	Ft	8,560.00	8560	8560	8560
7.22.1.6	Ø 12"	Ft	7,032.00	732	732	732
7.22.1.7	Ø 1"	Ft	158,299.00	5716	5716	5716
7.22.1.8	Ø 8"	Ft	5,044.00	545	545	545
7.22.1.9	Ø 6"	Ft	4,646.00	4645	4645	4645
7.22.1.1	Ø 5"	Ft	3,783.00	3784	3784	3784
7.22.1.11	Ø 4"	Ft	3,153.00	3154	3154	3154

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.22.1.12	Ø 3"	Ft	2,505.00	255	255	255
7.22.1.13	Ø 2.5"	Ft	2,169.00	2170	2170	2170
7.22.1.14	Ø 2"	Ft	1,252.00	1252	1252	1252
7.22.1.15	Ø 1.5"	Ft	895.00	895	895	895
7.22.1.16	Ø 1.25"	Ft	772.00	772	772	772
7.22.1.17	Ø 1"	Ft	158,299.00	742	742	742
7.22.1.18	Ø .75"	Ft	711.00	711	711	711
	[Above pipe prices shall include prices of adequate quantities of pipe accessories, viz. pipe elbows, tees, reducers etc.]					
7.22.2	BLACK STEEL PIPES					
	Supply, installation, testing and commissioning of 4 Schedule Black Steel pipes for all the condenser water piping system including cutting, edge preparation, welding, hanging etc. complete in all respect. Pipe hanger/isolator boxes with spring isolators, hanger rods, steel supports, anchors, all other materials and consumable in this connection shall be supplied by the Contractor under this head. The work shall be as per technical specification and sample approved by the Engineer-in-charge. .					
7.22.2.1	Ø 24" thickness minimum 17.5 mm	Ft	11,220.00	11220	11220	11220
7.22.2.2	Ø 2" thickness minimum 15 mm	Ft	8,773.00	8774	8774	8774
7.22.2.3	Ø 18" thickness minimum 14.2 mm	Ft	7,819.00	7819	7819	7819
7.22.2.4	Ø 16" thickness minimum 12.7 mm	Ft	6,565.00	6565	6565	6565
7.22.2.5	Ø 14" thickness minimum 11.2mm	Ft	5,623.00	5623	5623	5623
7.22.2.6	Ø 12" thickness minimum 1.4 mm	Ft	4,414.00	4414	4414	4414
7.22.2.7	Ø 1" thickness minimum 9.4 mm	Ft	-	3784	3784	3784
7.22.2.8	Ø 8" thickness minimum 8.13 mm	Ft	3,426.00	3426	3426	3426
7.22.2.9	Ø 6" thickness minimum 7.11 mm	Ft	3,046.00	345	345	345
7.22.2.1	Ø 5" thickness minimum 6.6 mm	Ft	2,774.00	2775	2775	2775

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.22.2.11	Ø 4" thickness minimum 6.1 mm	Ft	2,207.00	227	227	227
7.22.2.12	Ø 3" thickness minimum 5.59 mm	Ft	1,827.00	1827	1827	1827
7.22.2.13	Ø 2.5" thickness minimum 5.8 mm	Ft	1,218.00	1218	1218	1218
7.22.2.14	Ø 2" thickness minimum 3.81 mm	Ft	762.00	762	762	762
7.22.2.15	Ø 1.5" thickness minimum 3.81mm	Ft	639.00	639	639	639
7.22.2.16	Ø 1.25" thickness minimum 3.56 mm	Ft	555.00	555	555	555
7.22.2.17	Ø 1" thickness minimum 3.3 mm	Ft	-	55	55	55
	[Above pipe prices shall include prices of adequate quantities of pipe accessories, viz. pipe elbows, tees, reducers etc.]					
7.22.3	uPVC PIPES					
	Supply, installation and testing of water grade uPVC pipes of the following sizes including supply and installation of PVC sockets, elbows, tees, traps, hangers, unions and all other consumable etc. complete in all respect. The work shall be complete as per instruction of Engineer-in-charge. and samples shall be approved by the Engineer-in-Charge.					
7.22.3.1	Ø 4"	Ft	208,743.00	156	156	156
7.22.3.2	Ø 3"	Ft	208,743.00	2	2	2
7.22.3.3	Ø 2.5"	Ft	-	9	9	9
7.22.4	GALVANIZED IRON PIPES					
	Supply, installation and testing of GI pipes of the following sizes as per drawing including supply and installation of GI sockets, elbows, tees, traps, hangers, unions and all other consumable etc. complete in all respect. The work shall be complete as per instruction of Engineer-in-charge. and samples shall be approved by the Engineer-in-Charge.					
7.22.4.1	Ø 24"	Ft	536.00	25196	25196	25196
7.22.4.2	Ø 2"	Ft	479.00	21249	21249	21249
7.22.4.3	Ø 18"	Ft	189,827.00	18639	18639	18639

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.22.4.4	Ø 16"	Ft	16,066.00	1667	1667	1667
7.22.4.5	Ø 14"	Ft	13,847.00	13847	13847	13847
7.22.4.6	Ø 12"	Ft	11,347.00	11347	11347	11347
7.22.4.7	Ø 1"	Ft	9,143.00	9143	9143	9143
7.22.4.8	Ø 8"	Ft	6,728.00	6728	6728	6728
7.22.4.9	Ø 6"	Ft	4,764.00	4765	4765	4765
7.22.4.1	Ø 4"	Ft	3,525.00	3525	3525	3525
7.22.4.11	Ø 3"	Ft	2,264.00	2265	2265	2265
7.22.4.12	Ø 2.5"	Ft	1,748.00	1748	1748	1748
7.22.4.13	Ø 2"	Ft	-	137	137	137
7.22.4.14	Ø 1.5"	Ft	1,090.00	189	189	189
7.22.4.15	Ø 1"	Ft	678.00	678	678	678
7.22.4.16	Ø .75"	Ft	501.00	6	6	6
7.22.5	STEEL PIPE UNION					
	Supply and installation of steel pipe union including supply of all materials and consumables.					
7.22.5.1	Ø 4"	Each	2,516.00	2516	2516	2516
7.22.5.2	Ø 3"	Each	1,702.00	173	173	173
7.22.5.3	Ø 2.5"	Each	1,576.00	1577	1577	1577
7.22.5.4	Ø 2"	Each	1,009.00	19	19	19
7.22.5.5	Ø 1.5"	Each	208,743.00	631	631	631
7.22.5.6	Ø 1.25"	Each	504.00	55	55	55
7.22.5.7	Ø 1"	Each	315.00	316	316	316
7.22.5.8	Ø .75"	Each	252.00	252	252	252
7.22.6	U-TRAPS					
	Supply, installation and testing of U-traps in the condensate drain pipe of the FCUs including supply of all materials and consumables. The U-traps shall be made from PVC/ Galvanized iron/ copper material.					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.22.6.1	Ø 2.5"	Each	454.00	454	454	454
7.22.6.2	Ø 2"	Each	378.00	378	378	378
7.22.6.3	Ø 1.5"	Each	227.00	227	227	227
7.22.6.4	Ø 1.25"	Each	151.00	152	152	152
7.22.6.5	Ø 1"	Each	208,743.00	121	121	121
7.22.6.6	Ø .75"	Each	76.00	77	77	77
7.23	PIPE INSULATION					
7.23.1	Pipe Insulation for Chilled Water Pipe:					
	Supply and installation of insulation on pipe surfaces as per drawing, technical specifications and instructions of Engineer-in-charge. Nitrile Rubber, Class O, Minimum 32 Kg/m ³ density. Insulation thickness minimum 5 mm.					
	Country of Manufacture: Malaysia/India					
7.23.1.1	Ø 24"	Ft	3,027.00	327	327	327
7.23.1.2	Ø 2"	Ft	2,522.00	2522	2522	2522
7.23.1.3	Ø 18"	Ft	2,270.00	227	227	227
7.23.1.4	Ø 16"	Ft	2,018.00	217	217	217
7.23.1.5	Ø 14"	Ft	1,766.00	1766	1766	1766
7.23.1.6	Ø 12"	Ft	-	1513	1513	1513
7.23.1.7	Ø 1"	Ft	1,261.00	1261	1261	1261
7.23.1.8	Ø 8"	Ft	1,009.00	19	19	19
7.23.1.9	Ø 6"	Ft	757.00	756	756	756
7.23.1.1	Ø 4"	Ft	504.00	55	55	55
7.23.1.11	Ø 3"	Ft	378.00	378	378	378
7.23.1.12	Ø 2"	Ft	252.00	252	252	252
7.23.1.13	Ø 1.5"	Ft	189.00	189	189	189
7.23.2	PIPE INSULATION (CONDENSATE DRAIN PIPING)					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply and installation of insulation on pipe surfaces as per drawing, technical specifications and instructions of Engineer-in-charge. . The insulation shall be .75" thick close-cell cross-linked polyethylene/ elastomeric type and shall be complete with adhesive backed with peel-off paper.					
7.23.2.1	Ø 4"	Ft	353.00	282	282	282
7.23.2.2	Ø 3"	Ft	221.00	23	23	23
7.23.2.3	Ø 2.5"	Ft	183.00	183	183	183
7.23.2.4	Ø 2"	Ft	129.00	128	128	128
7.23.2.5	Ø 1.5"	Ft	110.00	20	20	20
7.23.2.6	Ø 1"	Ft	91.00	9	9	9
7.23.2.7	Ø .75"	Ft	73.00	73	73	73
7.24	DUCT WITH ACCESSORIES					
7.24.1	METAL DUCTING					
	Supply, installation and testing of metal ducts of different sizes as per drawing and detail technical specification including supply of duct hanger/ isolator boxes, hanger rods, steel supports, all other materials and consumables. Duct materials and construction shall be complete as per detail specification and SMACNA standards. The work shall be complete as per instruction of Engineer-in-charge. and sample shall be approved by the Engineer-in-Charge.					
7.24.1.1	Ducts made of 24 SWG GP Sheets	Sq.Ft	340.00	21	21	21
7.24.1.2	Ducts made of 22 SWG GP Sheets	Sq.Ft	227.00	227	227	227
7.24.1.3	Ducts made of 2 SWG GP Sheets	Sq.Ft	265.00	265	265	265
7.24.1.4	Ducts made of 18 SWG GP Sheets	Sq.Ft	315.00	316	316	316
7.24.2	FLEXIBLE ROUND DUCT					
	Country of Manufacture: Malaysia					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.24.2.1	Ø 16"	Ft	778.00	778	778	778
7.24.2.2	Ø 14"	Ft	749.00	749	749	749
7.24.2.3	Ø 12"	Ft	586.00	587	587	587
7.24.2.4	Ø 1"	Ft	449.00	449	449	449
7.24.3	ACOUSTIC LINING Supply and installation of Acoustic Duct Liner inside the duct surface according to the drawing and detail technical specification including supply of all materials and consumables. The work shall be complete as per instruction of Engineer-in-charge. and sample shall be approved by the Engineer-in-Charge.					
	Country of Manufacture: Malaysia/India					
7.24.3.1	1" thick Acoustic duct liner.	Ft	194.00	194	194	194
7.24.3.2	1/2" thick Acoustic duct liner.	Ft	93.00	94	94	94
7.24.4	SPLITTER DAMPER Supply and installation of Splitter Damper as per drawing and detail technical specification including supply of all materials and consumables. The work shall be complete as per instruction of Engineer-in-charge. and sample shall be approved by the Engineer-in-Charge.	Each	757.00			
				756	756	756
7.24.5	MANUAL VOLUME CONTROL DAMPER Supply and installation of Opposed Blade type Manual Volume Control Damper as per technical specification including supply of all materials and consumables. The work shall be complete as per instruction of Engineer-in-charge. and sample shall be approved by the Engineer-in-Charge.	Each	1,846.00			
				1846	1846	1846
7.24.6	FLEXIBLE DUCT JOINT/ CONNECTION					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply and installation of flexible ducts to make connection between equipments viz. FCU, AHU, FA-AHU, HRU-FA/AHU, EAF and Ducts as per drawing and detail technical specification including supply of all materials and consumables. The work shall be complete as per instruction of Engineer-in-charge. and sample shall be approved by the Engineer-in-Charge.	Each	1,892.00			
				1893	1893	1893
7.24.7	FRESH/ EXHAUST AIR LOUVER					
	Supply and installation of Fresh Air Louver constructed of extruded aluminium/ galvanized steel sheet, complete with bird/ rodent screen. The work shall be complete as per instruction of Engineer-in-charge. and sample shall be approved by the Engineer-in-Charge.	Each	2,333.00			
				2333	2333	2333
7.25	DUCT INSULATION					
	Supply and installation of insulation on the outside surface of metal ducts as per drawing and detail technical specification including supply of all materials and consumables. The work shall be complete as per instruction of Engineer-in-charge. and samples shall be approved by the Engineer-in-Charge.					
	The insulation shall be fire retardant Close cell Nitrile Rubber class O. It shall be adhesive backed with peel-off paper. The insulation shall have a maximum allowable 'K' value of .4 W/m ² C, with Self Adhesive and Alu Foil Outside. Density: 5 kg/m ³ , Thermal conductivity: .362W/m.k.					
	Country of Manufacture: Malaysia/China/India					
7.25.1	Insulation shall be .75" thick	Sq.Ft	103.00	14	14	14
7.25.2	Insulation shall be 1." thick	Sq.Ft	136.00	137	137	137
7.26	Chilled Water Thermostat for FCU					
7.26.1	Network Type Thermostat for Chilled Water FCU (BMS)					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.26.2	Supply, installation, testing and commissioning of modulating type (BMS facilitating) with communication system. Three multifunctioning input.. Display of current room temperature on set point is °C. (Network type) brand- SIEMENS, Oventrop, Honeywell, Belimo or equivalent.as per sample accepted /approved by the Engineer-in-charge. Country of Origin, Manufacture: USA/UK/EU/CANADA	Each	26,483.00			
	Digital Room Thermostat for Room Chilled Water FCU			26483	26483	26483
7.27	Supply of The thermostat shall Control 2 way chilled water valve, 3 speed fan switch, space temperature indication, space temperature set point adjustment, as Wired Controller With some IR Remote, transformer etc.	Each	92,722.00			
	Country of Origin, Manufacture: Malaysia/Thailand			9458	9458	9458
7.27.1	HEPA FILTER Price With holding frame / Housing -For each Grade Gel sealed mini pleat pleat H14 grade HEPA filter Supply & installation of GEL SEAL TYPE MINI PLEAT HEPA Filter of .3micron filtration @ Class H-14 Filter MPPS efficiency : 99.995 % / PAO efficiency : 99.999 % as per EN1822. Filter Construction: Media: Micro Glass Fiber media Seprators: Thermoplastic seprators with cold resin bond Frame: Anodised Alumnium extrusion Box cell with silicon gel from inside at periphery for sealing with hosing. (Silicon Gel shall be White colour and Food graded type) Faceguard : Expended metal, powder coated white (RAL 91) on both sides of filter. Initial Pressure Drop: 25mm of Wg. HEPA Housing box for Gel sealed mini pleat HEPA filter					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installation & commisioning of Housing Box for following sizes of Gel type HEPA filter assembly. Housing BOX Construction: BOX Construction: Minmum 2.2mm thick of extruded Alumnium anodised construction with knife edges at periphery for sealing the filter. Filter loading : Bottom side (From Inside the room) Ports: each housing shall have PAO charging port, upstream/downsteram concentration port and Differential Pressure port. Supply Air entry : TOP entry Damper construction: Low leakge type extruded Aluminium constructed Damper at top of BOX. Damper Operation: Top operated from service floor BOX Housing Fixing : 8 Nos Clits required with fastner to fixed on Walkable Flase Ceiling. Perforated sheet : 18G S.S 34 sheet with SS chain, perforation shall be Capsule type and not less than 7% of perforation area. Accessories: After loading filter from bottom Aluminium patti required to hold filter. Country of Origin, Manufacture: China					
7.27.1.1	61 MM x 61 MM x 117 MM - 55 CFM @ IPD of 25mm of WC	Each	1,475.00	114690	114433	114433
7.27.1.2	45 MM x 45 MM x 117 MM - 3 CFM @ IPD of 25mm of WC	Each	7,132.00	95773	95516	95516
7.27.2	Price Without holding frame/ Housing- For each Grade					
7.27.2.1	61 MM x 61 MM x 117 MM - 55 CFM @ IPD of 25mm of WC	Each	1,593.00	41616	41616	41616
7.27.2.2	45 MM x 45 MM x 117 MM - 3 CFM @ IPD of 25mm of WC	Each	-	3658	3658	3658
7.28	ULPA FILTER					
7.28.1	Price With holding frame / Housing -For each Grade Gel sealed mini pleat pleat U17 grade ULPA filter					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply & installation of GEL SEAL TYPE MINI PLEAT ULPA Filter of .3micron filtration @ Class H-14 Filter MPPS efficiency : 99.9995 % / PAO efficiency : 99.999 % as per EN1822. Filter Construction: Media: Micro Glass Fiber media Seprators: Thermoplastic seprators with cold resin bond Frame: Anodised Alumnium extrusion Box cell with silicon gel from inside at periphery for sealing with hosing. (Silicon Gel shall be White colour and Food graded type) Faceguard : Expended metal, powder coated white (RAL 91) on both sides of filter. Initial Pressure Drop: 27mm of Wg. ULPA Housing box for Gel sealed mini pleat ULPA filter Supply, installation & commsisisoning of Housing Box for following sizes of Gel type ULPA filter assembly. Housing BOX Construction: BOX Construction: Minnum 2.2mm thick of extruded Alumnium anodised construction with knife edges at periphery for sealing the filter. Filter loading : Bottom side (From Inside the room)					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Ports: each housing shall have PAO charging port, upstream/downstream concentration port and Differential Pressure port. Supply Air entry : TOP entry Damper construction: Low leakage type extruded Aluminium constructed Damper at top of BOX. Damper Operation: Top operated from service floor BOX Housing Fixing : 8 Nos Clits required with fastener to fixed on Walkable False Ceiling. Perforated sheet : 18G S.S 34 sheet with SS chain, perforation shall be Capsule type and not less than 7% of perforation area. Accessories: After loading filter from bottom Aluminium patti required to hold filter. Country of Origin, Manufacture: China					
7.28.1.1	61 MM x 61 MM x 1 MM - 55 CFM @ IPD of 27mm of WC	Each	132,415.00	132413	132413	132413
7.28.1.2	45 MM x 45 MM x 1 MM - 3 CFM @ IPD of 27mm of WC	Each	113,499.00	113496	113496	113496
7.28.2	Price Without holding frame/ Housing- For each Grade					
7.28.2.1	61 MM x 61 MM x 1 MM - 55 CFM @ IPD of 27mm of WC	Each	56,749.00	56748	56748	56748
7.28.2.2	45 MM x 45 MM x 1 MM - 3 CFM @ IPD of 27mm of WC	Each	50,444.00	5443	5443	5443
7.29	OPERATION AND MAINTANANCE OF CENTRAL AIR- CONDITIONING SYSTEM					
	Thorough maintenance, servicing, operation and minor repairing including necessary replacement of defective minor spare parts (departmentally supplied) if any, as per detailed daily, weekly, monthly, half yearly and yearly as per following work schedule for smooth functioning of the following capacity air-conditioning & ventilation system as per standard Engineer-in-charge. practice and maintenance manual of the manufacturer and direction of the Engineer-in-charge.					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.29.1	Up to 15 RT AC system (In a single plant house)	Per Month	1,122.00	9459	9459	9459
7.29.2	151 - 3 RT AC system (In a single plant house)	Per Month	189,165.00	18917	18917	18917
7.29.3	31 - 45 RT AC system (In a single plant house)	Per Month	254,091.00	25487	25487	25487
7.29.4	451 - 1 RT AC system (In a single plant house)	Per Month	315,275.00	315269	315269	315269
7.29.5	11 - 15 RT AC system (In a single plant house)	Per Month	390,941.00	39934	39934	39934
7.29.6	151 - 25 RT AC system (In a single plant house)	Per Month	479,217.00	47928	47928	47928
Note:- For daily, weekly, monthly, quarterly & annual maintenance follow " Book of Specification and Code of Practice (Public Works Department)" (Page: 47 - 49).						
7.30	AIR COOLER REPAIRING					
7.3.1	Replacement of the existing damaged / burnt out / unserviceable compressor by new compressor of following capacity with over load and all other standard safety control suitable for 22 / 24 volt, 5 Hz. single phase as per sample accepted / approved by the Engineer-in-charge.					
7.3.1.1	With reciprocating hermetically sealed type compressor					
7.3.1.1.1	12-138 BTU/HR	Each	1,305.00	22699	22699	22699
7.3.1.1.2	18-21 BTU/HR	Each	24,570.00	24570	24570	24570
7.3.1.1.3	237-25 BTU/HR	Each	26,764.00	26764	26764	26764
7.3.1.2	With rotary compressor					
7.3.1.2.1	12-138 BTU/HR	Each	20,178.00	2177	2177	2177

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.3.1.2.2	18-21 BTU/HR	Each	27,349.00	27349	27349	27349
7.3.1.2.3	237-25 BTU/HR	Each	28,373.00	28373	28373	28373
7.3.2	Replacement of the existing damaged / burnt out / unserviceable compressor by new compressor (reciprocating hermetically sealed type) of following capacity with over load and all other standard safety control suitable for 4 / 415 volt, 5 Hz. three phase as per sample approved by the Engineer-in-charge.					
7.3.2.1	355-385 BTU/HR	Each	50,633.00	5632	5632	5632
7.3.2.2	39-48 BTU/HR	Each	59,301.00	593	593	593
7.3.2.3	6-615 BTU/HR	Each	1,475.00	66858	66858	66858
7.3.2.4	78 BTU/HR	Each	79,416.00	79415	79415	79415
7.3.2.5	96 BTU/HR	Each	119,804.00	11982	11982	11982
7.3.2.6	12 BTU/HR	Each	157,637.00	157634	157634	157634
7.3.3	Servicing of air-cooler machine of following capacity by skilled technician with high pressure blower air sodium hydro-oxide solution including cleaning, greasing etc. complete with dismantling the same including both way carrying and re-fixing / testing commissioning etc.					
7.3.3.1	18 - 24 BTU/HR window type air-cooler	Each	831.00	831	831	831
7.3.3.2	36 - 48 BTU/HR split type air-cooler	Each	1,439.00	1439	1439	1439
7.3.3.3	6 BTU/HR and above split type air-cooler	Each	1,880.00	189	189	189
7.3.4	Replacement of existing damaged / unserviceable magnetic switch for fan motor, 38-415 volt, 5 Hz. by new one by S & F all necessary accessories as required.	Each	3,783.00	3784	3784	3784

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.3.5	Labour charge for refrigerant charging after repair of leakage (if required) including de-hydrating & purging etc. complete with testing commissioning by skilled technician as per direction of Engineer-in-charge.					
7.3.5.1	Up to 2 ton	Each	7,132.00	66	66	66
7.3.5.2	Above 2 ton	Each	1,290.00	1290	1290	1290
7.3.6	Replacing the existing damaged / out of order potential relay / contact relay 22V, 5 Hz. single phase by new one as per sample accepted / approved by the Engineer-in-charge. in Charge.	Each	835.00	835	835	835
7.3.7	Replacing the existing damaged / unserviceable over load protector for refrigerator 22V, 5Hz. by new one for safety control of compressor.(made in JAPAN / USA / EU).	Each	531.00	531	531	531
7.3.8	Replacing the existing damaged / unserviceable compressor oil as required.	Per Litre	895.00	895	895	895
7.3.9	Replacing the existing damaged / unserviceable selector switch 22/24V, 5 Hz. single phase by new one as per sample accepted / approved by the Engineer-in-charge.	Each	1,290.00	1290	1290	1290
7.3.1	Replacing the existing damaged/unserviceable thermostat control switch for room air-cooler machine 22/24V, 5 Hz. single phase by new one as per sample accepted / approved by the Engineer-in-charge.	Each	820.00	82	82	82
7.3.11	Replacing the existing damaged / unserviceable strainer of air-cooler by new one & as per sample accepted / approved by the Engineer-in-charge.	Each	274.00	273	273	273
7.3.12	Replacing the existing damaged / unserviceable 35 MFD capacitor of room air-cooler by new one.	Each	694.00	694	694	694

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.3.13	Replacing the existing damaged/unserviceable 45 MFD capacitor of room air-cooler by new one.	Each	789.00	789	789	789
7.3.14	Rewinding of the existing damaged / unserviceable blower-fan motor of room air-cooler by required sizes super enameled copper wire in/c varnishing, heating, testing etc.	Each	-	334	334	334
7.3.15	Making bush made of gun-metal in/c cutting and finishing as per existing sample by lathe machine etc. complete as required.	Each	682.00	682	682	682
7.31	SPARE PARTS OF AIR-COOLER (same brand as the main product and accepted / approved by the Engineer-in-charge.)					
7.31.1	R-5 refrigerant	Kg	1,539.00	1539	1539	1539
7.31.2	R-22 refrigeration	Kg	820.00	82	82	82
7.31.3	R-47/41a refrigeration	Kg	1,016.00	115	115	115
7.31.4	R-134a refrigeration	Kg	949.00	949	949	949
7.31.5	R-47/32 refrigeration	Kg	1,261.00	1261	1261	1261
7.31.6	Selector switch (window A/C)	Each	1,009.00	19	19	19
7.31.7	Thermostat switch (window A/C)	Each	757.00	756	756	756
7.31.8	Potential switch refrigeration	Each	1,037.00	631	631	631
7.31.9	A/C over load protector	Each	378.00	378	378	378
7.31.1	Strainer AC	Each	126.00	126	126	126
7.31.11	25-35 MFD capacitor	Each	441.00	45	45	45
7.31.12	4-5 MFD capacitor	Each	504.00	55	55	55
7.31.13	3.5-5 MFD Capacitor	Each	189.00	189	189	189
7.31.14	Moving motor for window AC	Each	1,261.00	1261	1261	1261
7.31.15	Moving motor for split type AC	Each	1,513.00	1513	1513	1513

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.31.16	Fan blade for window AC	Each	3,153.00	3154	3154	3154
7.31.17	Fan blade for split AC outdoor	Each	3,783.00	3784	3784	3784
7.31.18	Split AC indoor runner outdoor	Each	1,593.00	545	545	545
7.31.19	Window AC fan motor	Each	5,044.00	545	545	545
7.31.2	Split AC fan motor	Each	4,414.00	4414	4414	4414
7.31.21	Window AC blower runner	Each	2,522.00	2522	2522	2522
7.31.22	Window AC front cover	Each	5,044.00	545	545	545
7.31.23	Split AC PC board	Each	1,513.00	1513	1513	1513
7.31.24	Split AC casaldrayar	Each	2,522.00	2522	2522	2522
7.31.25	Window AC selector / thermostat nob.	Each	315.00	316	316	316
7.31.26	Magnetic contactor 38-44V (45-6A)	Each	1,892.00	1893	1893	1893
7.31.27	Magnetic contactor 22-24V 5Hz.	Each	1,513.00	1513	1513	1513
7.31.28	Split A/C electric connector (32A)	Each	-	316	316	316
7.31.29	Window AC cooling / heating condenser	Each	4,918.00	4918	4918	4918
7.32	COPPER TUBE INSULATION (Without profit , overhead expenses and VAT)					
7.32.1	1/4", 3/8", 1/2" dia copper tube insulation	Meter	126.00	126	126	126
7.32.2	5/8", 1" dia copper tube insulation	Meter	151.00	152	152	152
7.33	COMPRESSOR OIL (Without profit, verhead expenses and VAT)					
7.33.1	Compressor oil for window A/C compressor	Per Litre	1,009.00	19	19	19
7.33.2	Compressor oil for central A/C	Per Litre	3,153.00	3154	3154	3154
7.34	REMOTE CONTROL (General or equivalent) (Without profit, overhead expenses and VAT)					

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
7.34.1	For split type AC	Each	3,783.00	3784	3784	3784
7.34.2	For window type AC	Each	109,117.00	3784	3784	3784
7.35	CHEMICAL FOR CENTRAL AC (Without profit, overhead expenses and VAT)					
7.35.1	NALCO 7311 liquid	Per Kg	1,027,795.00	1135	1135	1135
7.35.2	NALCO 733 liquid	Per Kg	-	1293	1293	1293
7.35.3	NALCO 9 liquid	Per Kg	308,969.00	984	984	984
7.35.4	K-11 liquid	Per Kg	453,995.00	782	782	782
7.35.5	B-21 liquid	Per Kg	616,677.00	756	756	756
7.35.6	K-16 liquid	Per Kg	725,132.00	732	732	732
7.36	DISMANTLING, RE-LOCATION AND RE-INSTALLATION OF AC (Without Pipe)					
7.36.1	Window Type	Per Job	-	3715	3458	3458
7.36.2	Split Type 12 BTU/hr	Per Job	889,074.00	8669	869	869
7.36.3	Split Type 18-3 BTU/hr	Per Job	10,089.00	997	923	923
7.36.4	Split Type Above 3 BTU/hr /Single Package/Split Ducted Type	Per Job	15,133.00	1487	13831	13831

THUMB RULE FOR AIR CONDITIONING LOAD CALCULATION

The average air-conditioning load (for places other than auditorium, cinema halls, conference Hall etc.

(b) Can be estimated on the basis of floor area: i.e. 1 Refrigeration Ton for 150 sq. feet area, but it may vary for different design condition. This thumb rule is applicable for spaces with insulated roof or intermediate floors with occupancy = 6sq. Meter per person, power & lighting level = 20 watts per sq. meter and external glazing area of 15% of floor area (For 10 feet height).

(c) For auditorium, cinema halls or large public places, the thumb rule is to use 1 RT for 5 persons or 1 RT per 11 sqm of floor area having standard height of 12 feet.

Note:

i) Due to location of the room & partition wall, location of the window towards the direction of the sunlight, incase of glass wall above thumb rule may vary case to case.

ii) A/C with HEPA/ULPA filter shall be used in OT, ICU, CCU and recovery rooms of a Hospital.

iii) Adequate positive Air flow as per BNBC shall be maintained in OT, ICU, CCU and Recovery Rooms of a Hospital. Incase of COVID-19 ward/OT/ICU/CCU, follow WHO guidelines.

REFRIGERATION & AIR CONDITIONING UNITS

1 Btu = 778 ft-lb = 1054.8 joules = 252 Calories = 0.252 K cal

1 Horsepower = 33000 ft-lb/min = 746 watts = 2545.6 BTU/HR

1 ton of Refrigeration (1 RT) 12000 BTU/HR

1 ft/Sec = 0.305 m/Sec

1 m/Sec = 3.28 ft/Sec

1 cu ft/min (CFM) = 7481 gal (us)/min = 28.32 litres/min

Internationally accepted norms for comfortable airconditioning are as follows:

Temperature : $24 \pm 1^{\circ}\text{C}$

Relative humidity : Less than 50%

Air flow : 50m/minute

Direction of air flow : From top or from front.

Fresh air requirement : in no case the outdoor air quantity shall be lower than 2.5 l/s per person.

Dust, fume, smoke, odour and bacteria

Control should be incorporated

Table 7.1 Inside Design Condition of Some Application for Summer

SI. No	Use Category of Space	Indoor Design Conditions	
		Dry Bulb Temperature	Relative Humidity (%)
1	Restaurants, Cafeteria and Dining Hall	23~26	55~60
2	Kitchens	28~31	---
3	Office buildings	23~26	55~60
4	Bank/Insurance/ Commercial building	23~26	45~55
5	Departmental stores	23~26	50~60
6	Hotel guest rooms	23~26	50~60
7	Ball room/ meeting room	23~26	50~60
8	Class rooms	23~26	50~60
9	Auditoriums	23~26	50~60
10	Recovery rooms	24~26	45~55
11	Patient rooms	24~26	45~55
12	Operation theatres	17~27	45~55
13	Delivery room	20~23	45~55
14	ICU/CCU	20~23	30~60

15	New born Intensive care	22.5~25.5	30~60
16	Treatment room	23~25	30~60
17	Trauma room	17~27	45~55
18	Endoscopy/Bronchoscopy	20~23	30~60
19	X-ray (diagnostic & treatment)	25.5~27	40~50
20	X- ray (surgery/critical area and catherization)	21~24	30~60
21	Laboratory (diagnostics)	22.5~24.5	30~60
22	Art Galleries/ Museums	17~22	40~55
23	Libraries	20~22	45~55
24	Radio studio/Television rooms	23~26	45~55
25	Telephone terminal rooms	22~26	40~50
26	Airport terminal/bus terminal	23~26	50~60

Table 7.2: Outside Design Conditions for Different Stations

Station	Cooling DB/MWB						Evaporation, WB/MDB						Range of
	0.40%		1%		2%		0.40%		1%		2%		
	DB	MWB	DB	MWB	DB	MWB	DB	MWB	DB	MWB	DB	MWB	DB
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>13</i>	<i>14</i>
Barisal	35.5	28.5	34.5	28.5	34.0	28.0	30.0	33.0	29.5	33.0	29.0	32.0	5.0
Bogra	36.5	28.5	35.5	28.5	34.5	28.0	31.5	33.5	30.0	33.0	29.0	33.0	5.5
Chandpur	35.5	28.5	34.5	28.5	34.0	28.0	29.5	33.0	29.5	33.0	29.0	32.5	5.0
Chittagong	34.0	28.5	33.5	28.5	33.0	28.0	29.5	32.5	29.0	32.5	28.5	32.0	4.5
Comilla	35.0	27.5	34.5	27.5	34.0	27.5	29.0	33.0	28.5	32.5	28.0	32.0	5.5
Cox'Bazar	34.0	27.5	33.5	27.5	33.0	27.5	29.0	31.0	29.0	30.0	29.0	30.0	5.0
Dhaka	35.55	27.5	35.0	27.0	34.5	27.0	29.0	33.0	28.5	29.0	28.5	29.0	5.0
Dinajpur	36.0	28.5	35.0	28.0	34.5	28.0	30.0	32.5	29.0	33.0	29.0	33.0	5.5
Faridpur	36.5	28.5	35.5	28.0	34.5	28.0	29.5	33.0	29.0	33.0	29.0	33.0	5.0
Ishurdi	37.5	27.0	36.5	27.0	35.5	28.0	30.0	34.5	29.0	33.5	29.0	33.5	6.0
Jessore	38.0	28.5	37.0	28.5	36.0	28.0	30.0	35.0	30.0	35.0	29.5	34.0	6.5
Kulna	36.5	29.0	36.0	28.0	35.5	28.0	30.0	34.0	30.0	34.0	29.5	33.5	5.0
Mongla	37.0	31.0	36.0	30.5	35.0	30.0	33.0	34.0	32.5	34.0	32.0	33.5	5.0
Mymensingh	35.0	28.0	34.0	28.0	33.5	27.5	29.5	33.0	29.0	32.5	28.5	32.0	4.5
Patuakhali	35.5	28.5	35.0	28.5	34.5	28.5	30.0	33.0	30.0	33.0	29.5	32.5	5.0
Rajshahi	35.5	29.0	34.5	28.5	34.0	29.0	31.5	33.0	31.0	32.5	30.0	31.5	5.0
Rangamati	35.5	26.0	34.5	27.0	34.0	27.5	28.5	33.5	28.0	32.5	28.0	32.5	6.0
Rangpur	35.5	28.5	34.5	28.0	34.0	28.0	29.5	30.5	29.5	30.0	29.5	30.0	5.0
Sylhet	35.5	27.0	34.5	27.0	34.0	26.5	28.5	32.5	28.0	32.5	28.0	32.5	5.5
Tangail	36.0	27.5	35.5	27.5	34.5	27.5	29.0	33.5	28.5	33.0	28.5	33.0	5.5

Table 7.3: Minimum Performance of Air Conditioner and Chillers

Equipment Class and Size Category	Minimun COP	Minimun IPLV	Test Standard
Unitary air cooled air conditioner			

≥19 and <40 kW (≥5.4 and <11 tons)	3.08		ARI 210/240
≥40 and <70 kW (≥11 to <20 tons)	3.08		ARI 340/360
≥70 kW (≥20 tons)	2.93	2.99	ARI 340/360
Unitary water cooled air conditioner			
<19 kW (<5.4 tons)	4.1		ARI 210/240
≥19 and <40 kW (≥5.4 and <11 tons)	4.1		ARI 210/240
≥40 kW (≥11 tons)	3.22	3.02	ARI 210/240
Air Cooled Chiller, electrically operated			
<530 kW (<150 tons)	2.9	3.16	ARI 550/590
≥530kW (≥150 tons)	3.05	3.32	ARI 550/590
Centrifugal water Cooled Chiller, electrically operated			
<530 kW (<150 tons)	5.8	6.09	ARI 550/590
≥530 and <1050 kW (≥150 and <300 tons)	5.8	6.17	ARI 550/590
≥1050 kW (≥300 tons)	6.3	6.61	ARI 550/590
Reciprocating compressor, water cooled chiller, electrically operated			
All Capacities	4.2	5.05	ARI 550/590
Rotary screw and scroll compressor, water cooled chiller, electrically operated			
<530 kW (<150 tons)	4.7	5.49	ARI 550/590
≥530 and <1050 kW (≥150 and <300 tons)	5.4	6.17	ARI 550/590
≥1050 kW (≥300 tons)	5.75	6.43	ARI 550/590

TERMS AND CONDITIONS OF CHILLER TYPE AIR-CONDITIONING SYSTEM (Part and parcel of tender document)

- 1 The bidder shall submit the technical proposal of CHILLER TYPE AIR-CONDITIONING items with sealed & signed by manufacturing company on their Letterhead pad and main catalogue (marked) including mentioning brand, model & country of origin of the proposed items like Chiller, Cooling Tower, AHU, FCU, Pump etc.
- 2 The bidder shall submit a certificate issued by manufacturing Company stating the time span of Chiller manufacturing experience of the manufacturer. The certificate must be authenticated by chamber of commerce/Ministry of Commerce/Ministry of foreign Affairs of Chiller manufacturing Company. The bidder shall submit the detail address of the factory, telephone no., website address, e-mail address and company profile of the lift manufacturing company.
- 3 The proposed HVAC manufacturing company shall have their own testing facilities and R&D (Research and development) wing/centre, related document to be submitted with tender.
- 4 The bidder shall submit a certificate by manufacturing company stating that minimum 500 Nos. of the proposed brand of CHILLER have been used in minimum 10 (ten) countries of the world including the manufacturing country for equal to or more than ten years. The certificate must be authenticated by Chamber of Commerce/ Ministry of Commerce/ Ministry of Foreign Affairs of the Chiller manufacturing company.
- 5 The bidder shall submit AHRI/ Eurovent Certificate of the proposed brand (not older than 5 years), ISO certificates for management, occupational health and safety standard certificates, Environmental safety certificates obtained by Chiller manufacturer shall be submitted by Tenderer.

- 6 Each bidder must be the Sole agent /Representative / Distributor of the proposed brand Chiller in the tender and the bidder must submit its all valid supporting documents issued by original manufacturing company. Manufacturer's certificate stating that the bidder has sufficient trained and experienced manpower to install, testing and commissioning of the CHILLER TYPE AIR-CONDITIONING SYSTEM as per ANSI/ASHRAE/IES Standard 90.1 standard, relevant code and conformities.
- 7 The bidder shall have B, C class contractor license provided by the electric licensing board. After completion of the work, the bidder and the manufacturing company shall provide the certification about installation, testing and commissioning of the Chiller System and as built drawing of total Chiller System.
- 8 The bidder shall give the assurance from the manufacturing company to supply of spare parts of Chiller for minimum 20 years and this assurance must be authenticated by the Chamber of Commerce/ Ministry of Commerce/ Ministry of foreign affairs of the concerned manufacturing company.
- 9 The block diagram & automation system of the complete Chiller system of the proposed project including all control system, power components, on manufacturer's letterhead pad must be submitted with the contract.
- 10 The bidder shall submit a work program to complete the HVAC equipment supply and installation, testing and commissioning work and a statement that before opening LC, they shall get selection of HVAC items from Procuring entity prior to manufacturing.
- 11 The successful bidder must submit the detail packing list with sealed and signed by the Chiller, Cooling Tower, AHU, FCU, Pump etc. manufacturing company to the concerned Executive Engineer minimum 15 days before shipment and HVAC equipment shall be listed packet wise in detail. That packing list must comply the items described in the agreement and as per selection. The manufacturing company must certify that all parts/items are supplied in the packing list. The name of the project and LC no. shall be marked clearly in the packets. Equipment of one contract cannot be packetized together with other equipment/ other contracts.
- 12 Before shipment, Factory Acceptance Test (performance test of safety devices of Chiller and Quality assurance tests of the products as per standards) shall have to be carried out by the manufacturer in presence of nominated engineers of PWD at the Chiller manufacturing factory premises. One engineer will be nominated for one Chiller (having plant Cooling Capacity: 100 TR Minimum) and One engineer will be nominated for one Cooling tower (having plant Cooling Capacity: 300 TR Minimum) and. For two Chiller in a single tender minimum one engineer will accomplish this inspection and testing. For more than two Chillers in a single tender, the number of nominated engineers will be increased by one per two Chillers. All cost related to engineers' travel, food, accommodation, etc. will be borne by awarded organization/Manufacturer. The expenditure for this will be incorporated by the bidder at the time of participation. For special reasons if inspection is not performed by the engineers of the PWD, taking prior approval of the procuring entity quality assurance tests will be carried out by Internationally accepted inspection agencies (home and abroad).
- 13 Post landing inspection for imported Chiller, Cooling Tower, AHU, FCU, Pump(s) shall be done by representatives of Procuring Entity according to the packing list and the expenditure for it will be carried out by Contractor/ Supplier. After post landing inspection from the port, the imported equipment shall be reached directly to the project site according to the condition of the contract.

- 14 The bidder shall certify that all given certificates/ documents/ drawings are complete and correct. If any error is found, the contract will be cancelled and the bidder will be disqualified from future participation of any contract.

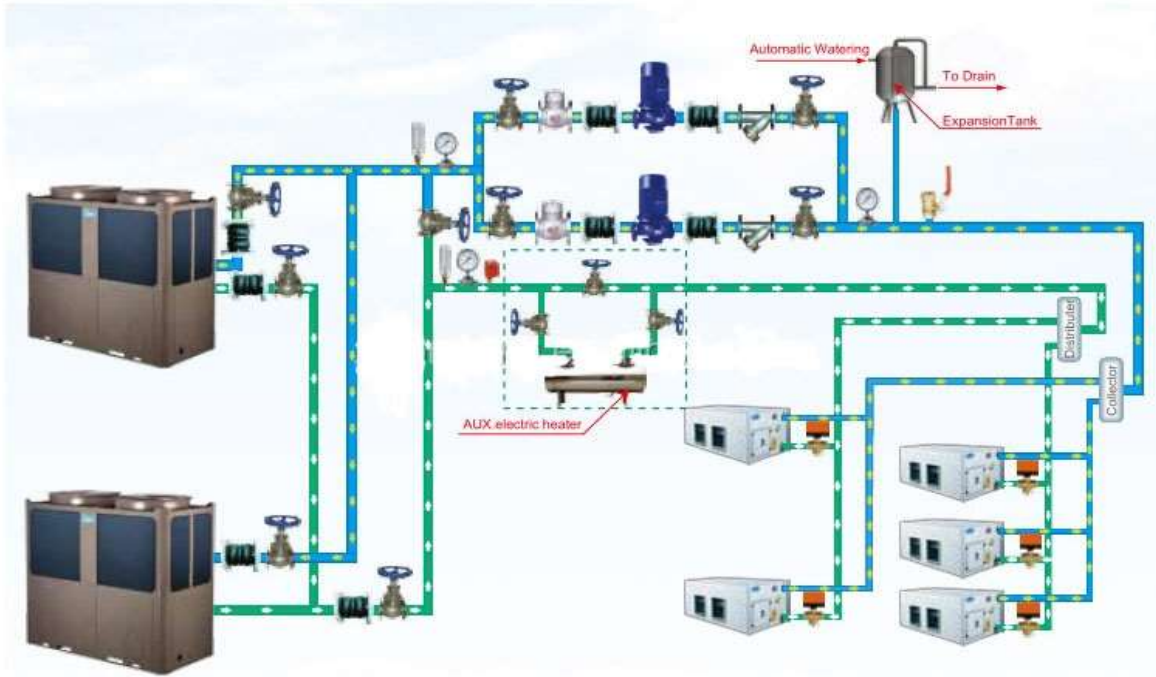


Figure 7.1: Typical diagram of Air Cooled chiller air conditioning systems

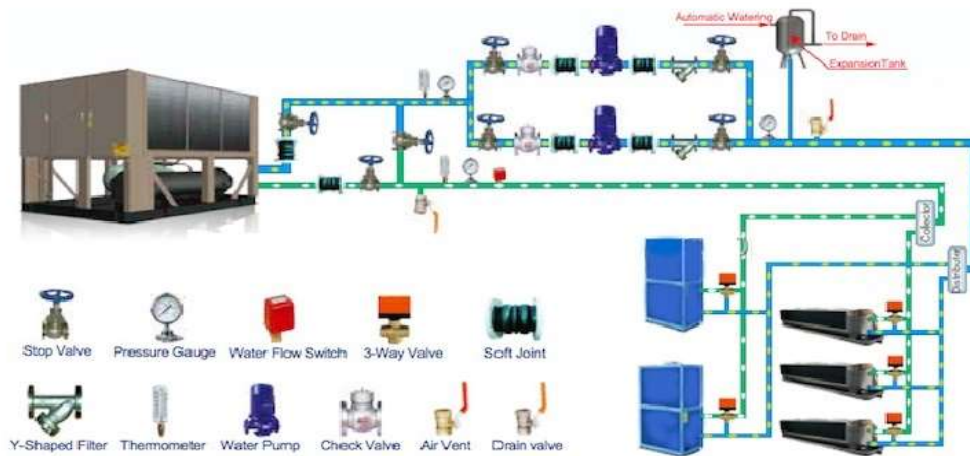


Figure 7.2: Different components of Central Air Conditioning systems



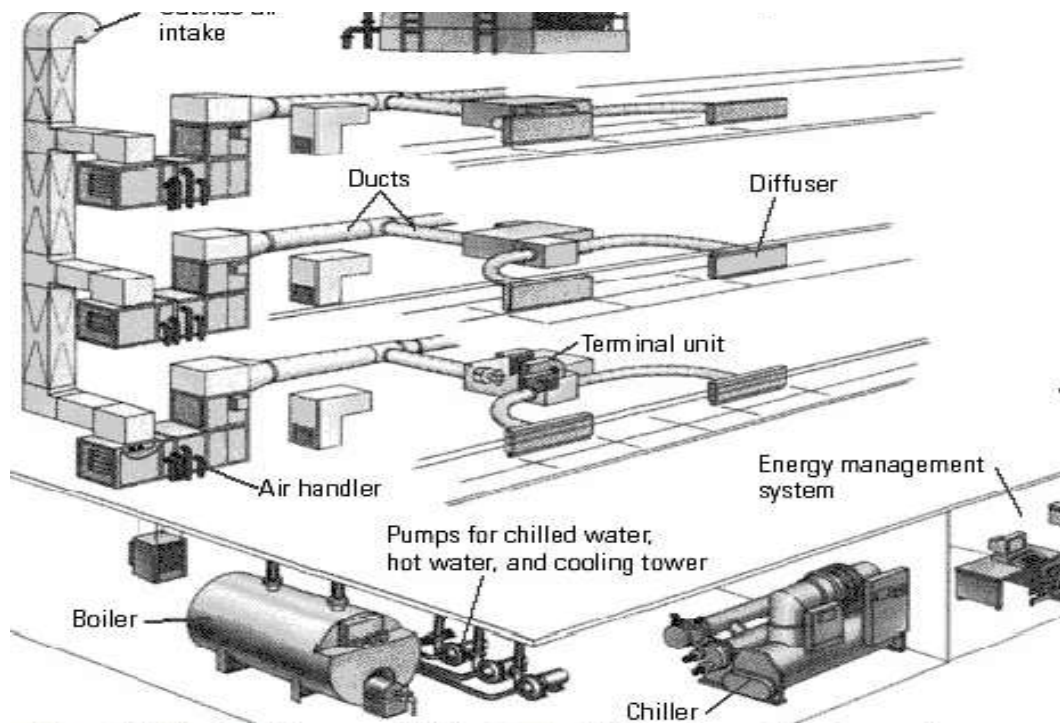


Figure 7.3: Typical diagram of Water Cooled chiller air conditioning systems

Subhead-9

Wood & Furniture Related Works

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
9.1	TIMBER					
	Supplying of following seasoned & sized wood including loading, unloading and proper stacking in govt. store.					
9.1.1	Burma teak	Per Cft.	8,954.00	8827	9080	9080
9.1.2	Chittagong teak	Per Cft.	5,549.00	5422	5799	5799
9.1.3	Shilkorai	Per Cft.	3,153.00	3153	3153	3153
9.1.4	Teak chambal	Per Cft.	4,666.00	4539	4729	4729
9.1.5	Chapalish	Per Cft.	2,901.00	2775	3027	3027
9.1.6	Gamari	Per Cft.	2,396.00	2270	2522	2522
9.1.7	Kathal	Per Cft.	3,027.00	3027	3027	3027
9.1.8	Garjon / jam / local sal	Per Cft.	2,774.00	2648	2838	2838
9.1.9	Chickrashi	Per Cft.	3,153.00	3153	3153	3153
9.1.10	Mehogani	Per Cft.	2,522.00	2522	2522	2522
9.2	VENEREED BOARD					
	Supplying of following categories veneered board as per sample accepted / approved by the engineer.					
9.2.1	BT veneered board Type : One side face & other side commercial Density : 550 kg / m ³ Thickness : 18 mm	Per Sft.	141.00	141.00	141.00	141.00
9.2.2	BT veneered board Type : Both side face Density : 550 kg / m ³ Thickness : 18 mm	Per Sft.	209.00	209.00	209.00	209.00
9.2.3	BT veneered board Type : One side face & other side commercial Density : 550 kg / m ³ Thickness : 12 mm	Per Sft.	111.00	111.00	111.00	111.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
9.2.4	BT veneered board Type: Both side face Density: 550 kg / m3 Thickness: 12 mm	Per Sft.	193.00	193.00	193.00	193.00
9.2.5	Crown teak (C.T) veneered board Type : One side face & other side commercial Density : 500 kg / m3 Thickness : 18 mm	Per Sft.	110.00	110.00	110.00	110.00
9.2.6	Crown teak (C.T) veneered board Type : Both side face Density : 500 kg / m3 Thickness : 18 mm	Per Sft.	161.00	161.00	161.00	161.00
9.2.7	Crown teak (C.T) veneered board Type: One side face & other side commercial Density: 550 kg / m3 Thickness: 12 mm	Per Sft.	103.00	103.00	103.00	103.00
9.2.8	Crown teak (C.T) veneered board Type: Both side face Density: 550 kg / m3 Thickness: 12 mm	Per Sft.	146.00	146.00	146.00	146.00
9.2.9	Teak chambol (T.C) veneered board Type: One side face & other side commercial Density: 500 kg / m3 Thickness: 18 mm	Per Sft.	101.00	101.00	101.00	101.00
9.2.10	Teak chambol (T.C) veneered board Type: Both Side face Density: 500 kg / m3 Thickness: 18 mm	Per Sft.	165.00	165.00	165.00	165.00
9.2.11	Teak chambol (T.C) veneered board Type : One side face & other side commercial Density : 500 kg / m3 Thickness : 12 mm	Per Sft.	112.00	112.00	112.00	112.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
9.2.12	Teak chambol (T.C) veneered board Type : Both Side face Density : 500 kg / m3 Thickness : 12 mm	Per Sft.	136.00	136.00	136.00	136.00
9.2.13	Garjan veneered board Type : Both side face Density : 500 kg / m3 Thickness : 18 mm	Per Sft.	109.00	109.00	109.00	109.00
9.2.14	Garjan veneered board Type : Both side face Density : 500 kg / m3 Thickness : 12 mm	Per Sft.	98.00	98.00	98.00	98.00
9.2.15	Plain (particle) board Density : 500 kg / m3 Thickness : 18 mm	Per Sft.	61.00	61.00	61.00	61.00
9.2.16	Plain (particle) board Density : 500 kg / m3 Thickness : 12 mm	Per Sft.	52.00	52.00	52.00	52.00
9.3	Medium Dencity Fibre (MDF) Wood			-	-	-
9.3.1	Red oak/Beach venereed one side face mdf wood 18 mm	Per Sft.	233.00	233.00	233.00	233.00
9.3.2	Red oak/Beach venereed one side face mdf wood 12 mm	Per Sft.	179.00	179.00	179.00	179.00
9.4	PLY Wood					
	Supply of burma teak (B.T) plywood of following size and categories as per sample accepted / approved by the engineer.					
9.4.1	Type : Both side B.T Thickness : 18 mm	Per Sft.	165.00	165.00	165.00	165.00
9.4.2	Type : Both side B.T Thickness : 12 mm	Per Sft.	139.00	139.00	139.00	139.00
9.4.3	Type : Both side B.T Thickness : 6 mm	Per Sft.	121.00	121.00	121.00	121.00
9.4.4	Type : Both side B.T Thickness : 4 mm	Per Sft.	113.00	113.00	113.00	113.00
9.4.5	Type: Both side B.T Thickness: 3 mm	Per Sft.	107.00	107.00	107.00	107.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
9.4.6	Type: One side face B.T Thickness: 18 mm	Per Sft.	125.00	125.00	125.00	125.00
9.4.7	Type: One side face B.T Thickness: 12 mm	Per Sft.	97.00	97.00	97.00	97.00
9.4.8	Type: One side face B.T Thickness: 6 mm	Per Sft.	67.00	67.00	67.00	67.00
9.4.9	Type: One side face B.T Thickness: 4 mm	Per Sft.	48.00	48.00	48.00	48.00
9.4.10	Type: One side face B.T Thickness: 3 mm	Per Sft.	42.00	42.00	42.00	42.00
9.5	Supply of garjan plywood (plytex) of following size and categories as per sample accepted / approved by the engineer.					
9.5.1	Type : One side face & other side commercial Thickness : 18 mm	Per Sft.	113.00	113.00	113.00	113.00
9.5.2	Type : One side face & other side commercial Thickness : 12 mm	Per Sft.	88.00	88.00	88.00	88.00
9.5.3	Type : One side face & other side commercial Thickness : 6 mm	Per Sft.	63.00	63.00	63.00	63.00
9.5.4	Type : One side face & other side commercial Thickness : 4 mm	Per Sft.	47.00	47.00	47.00	47.00
9.5.5	Type : One side face & other side commercial Thickness : 3 mm	Per Sft.	39.00	39.00	39.00	39.00
9.6	MELAMINE FACE CHIP BOARD (MFC)					
	Supply of melamine face chip board (MFC) of following size and categories as per sample accepted / approved by the engineer.					
9.6.1	Type : Both side face (various color) Thickness : 18 mm	Per Sft.	103.00	103.00	103.00	103.00
9.6.2	Type : Both side face (various color) Thickness : 12 mm	Per Sft.	83.00	83.00	83.00	83.00
9.7	HARDWARE MATERIALS			-	-	-
9.7.1	Iron nail 6" , 5" , 4" (heavy)	Per Kg	183.00	183.00	183.00	183.00
9.7.2	Iron nail 6" , 5" , 4" (light)	Per Kg	164.00	164.00	164.00	164.00
9.7.3	Iron nail 2-1/2" , 2" , 1-1/2" (heavy)	Per Kg	164.00	164.00	164.00	164.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
9.7.4	Iron nail 2-1/2", 2", 1-1/2" (light)	Per Kg	177.00	177.00	177.00	177.00
9.7.5	Iron screw, 2"	Per Doz.	15.00	15.00	15.00	15.00
9.7.6	Iron screw 1-1/2", 1-1/4"	Per Doz.	15.00	15.00	15.00	15.00
9.7.7	Iron screw 1", 3/4", 1/2"	Per Doz.	23.00	23.00	23.00	23.00
9.7.8	Glass pin 1/2"	Per Kg.	378.00	378.00	378.00	378.00
9.7.9	Iron Wall Clamp L shape (2 nos = 1 set)	Per Set	252.00	252.00	252.00	252.00
9.7.10	Drawer channel 20" long (2 nos. = 1 set)	Per Set	252.00	252.00	252.00	252.00
9.7.11	Drawer channel 18" long (2 nos. = 1 set)	Per Set	227.00	227.00	227.00	227.00
9.7.12	Drawer channel 16" long (2 nos. = 1 set)	Per Set	202.00	202.00	202.00	202.00
9.7.13	Drawer channel 14" long (2 nos. = 1 set)	Per Set	177.00	177.00	177.00	177.00
9.7.14	Drawer channel 12" long (2 nos. = 1 set)	Per Set	151.00	151.00	151.00	151.00
9.7.15	Drawer Ball channel 20" long	Per Set	530.00	530.00	530.00	530.00
9.7.16	Drawer Ball channel 18" long	Per Set	477.00	477.00	477.00	477.00
9.7.17	Drawer Ball channel 16" long	Per Set	424.00	424.00	424.00	424.00
9.7.18	Drawer Ball channel 14" long	Per Set	371.00	371.00	371.00	371.00
9.7.19	Drawer Ball channel 12" long	Per Set	318.00	318.00	318.00	318.00
9.7.20	M.S box Channel 1", 3/4", 1/2"	Each	177.00	177.00	177.00	177.00
9.7.21	S.S box Channel 1", 3/4", 1/2"	Each	284.00	284.00	284.00	284.00
9.7.22	Iron hinge 3"	Each	76.00	76.00	76.00	76.00
9.7.23	Iron hinge 2.5"	Each	63.00	63.00	63.00	63.00
9.7.24	Iron hinge 2"	Each	44.00	44.00	44.00	44.00
9.7.25	Iron piano hinges (6 ft)	Each	340.00	340.00	340.00	340.00
9.7.26	Iron conceal hinges (6 ft)	Per Set	378.00	378.00	378.00	378.00
9.7.27	Decorative drawer handle 6"	Each	366.00	366.00	366.00	366.00
9.7.28	Decorative drawer handle 4"	Each	290.00	290.00	290.00	290.00
9.7.29	Special type drawer handle 6"	Each	265.00	265.00	265.00	265.00
9.7.30	Special type drawer handle 4"	Each	227.00	227.00	227.00	227.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
9.7.31	Normal type drawer handle 6"	Each	151.00	151.00	151.00	151.00
9.7.32	Normal type drawer handle 4"	Each	126.00	126.00	126.00	126.00
9.7.33	Drawer knob	Each	95.00	95.00	95.00	95.00
9.7.34	Special type drawer lock	Each	290.00	290.00	290.00	290.00
9.7.35	Drawer lock (normal)	Each	126.00	126.00	126.00	126.00
9.7.36	Drawer lock (best quality)	Each	202.00	202.00	202.00	202.00
9.7.37	Glass lock (normal)	Each	202.00	202.00	202.00	202.00
9.7.38	Glass lock (Best Quality)	Each	259.00	259.00	259.00	259.00
9.7.39	Stopper magnet	Each	82.00	82.00	82.00	82.00
9.7.40	Magnet catcher	Each	139.00	139.00	139.00	139.00
9.7.41	Piano hinge 6' long (stainless steel)	Each	151.00	151.00	151.00	151.00
9.7.42	Piano hinge 6' long (brush)	Each	164.00	164.00	164.00	164.00
9.7.43	Welding rod (M.S) no.-6012 (4kg = 1pkt)	per pkt	4,162.00	4,162.00	4,162.00	4,162.00
9.7.44	Steel Almirah lock (iron)	Each	315.00	315.00	315.00	315.00
9.7.45	Steel Almirah handle lock (foreign)	Each	605.00	605.00	605.00	605.00
9.7.46	Steel Almirah S lock (foreign)	Each	820.00	820.00	820.00	820.00
9.7.47	Steel Almirah drawer lock	Each	189.00	189.00	189.00	189.00
9.7.48	File cabinet lock	Each	694.00	694.00	694.00	694.00
9.7.49	Steel Almirah hurka	Each	353.00	353.00	353.00	353.00
9.7.50	Steel Almirah mukhpan	Each	151.00	151.00	151.00	151.00
9.7.51	Steel Almirah flad stick	Each	76.00	76.00	76.00	76.00
9.7.52	Steel Almirah drawer handle	Each	113.00	113.00	113.00	113.00
9.7.53	Steel Almirah rod pin	Each	32.00	32.00	32.00	32.00
9.7.54	File Cabinet handle	Per Set	265.00	265.00	265.00	265.00
9.7.55	File Cabinet rod pin	Each	38.00	38.00	38.00	38.00
9.7.56	Rivet no-6/8/10	Per Kg	391.00	391.00	391.00	391.00
9.7.57	Filler Rod	Per Kg	391.00	391.00	391.00	391.00
9.7.58	Best quality Ica glue (Foreign)	Per Kg	353.00	353.00	353.00	353.00
9.7.59	Best quality Ica glue (Local)	Per Kg	315.00	315.00	315.00	315.00
9.7.60	10 mm plain white glass (local)	Per Sft.	179.00	179.00	179.00	179.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
9.7.61	10 mm plain color glass (local)	Per Sft.	309.00	309.00	309.00	309.00
9.7.62	8 mm plain white glass (local)	Per Sft.	170.00	170.00	170.00	170.00
9.7.63	8 mm plain color glass (local)	Per Sft.	290.00	290.00	290.00	290.00
9.7.64	6 mm plain white glass (local)	Per Sft.	113.00	113.00	113.00	113.00
9.7.65	6 mm plain color glass (local)	Per Sft.	195.00	195.00	195.00	195.00
9.7.66	5 mm plain white glass (local)	Per Sft.	96.00	96.00	96.00	96.00
9.7.67	5 mm mirror	Per Sft.	124.00	124.00	124.00	124.00
9.7.68	5 mm tinted glass	Per Sft.	120.00	120.00	120.00	120.00
9.7.69	Glass cutting charge (plain)	Per Sft.	76.00	76.00	76.00	76.00
9.7.70	Glass cutting charge (molding bet)	Per Sft.	151.00	151.00	151.00	151.00
9.7.71	Caster wheel 2 " (4nos = 1 set)	1 Set	883.00	883.00	883.00	883.00
9.7.72	Caster wheel 1.5 " (4nos = 1 set)	1 Set	694.00	694.00	694.00	694.00
9.7.73	Special type caster wheel 2 " (4nos = 1 set)	1 Set	1,261.00	1,261.00	1,261.00	1,261.00
9.7.74	Cocksheets	Per Sft.	19.00	19.00	19.00	19.00
9.7.75	Foam 1"	Per Sft.	19.00	19.00	19.00	19.00
9.7.76	Carpet (local , normal)	Per Sft.	132.00	132.00	132.00	132.00
9.7.77	Carpet (local , Best Quality)	Per Sft.	227.00	227.00	227.00	227.00
9.7.78	Consealed Hings (foreign , best quality, ss)	Each	479.00	479.00	479.00	479.00
9.8	CANE & CUSHION MATERIALS					
9.8.1	Nylon cane	per Lb.	479.00	479.00	479.00	479.00
9.8.2	Natural cane thin (SYLHET)	Per Kg	5,549.00	5,549.00	5,549.00	5,549.00
9.8.3	Baby dolna (cane made)	Per Pcs	10,719.00	10,719.00	10,719.00	10,719.00
9.8.4	Baby cot (cane made)	Per Pcs	13,242.00	13,242.00	13,242.00	13,242.00
9.8.5	RAJSHAHI silk cloth	per yrd	1,576.00	1,576.00	1,576.00	1,576.00
9.8.6	Plain curtain cloth : local (6ft = 1 set)	Per Set	1,198.00	1,198.00	1,198.00	1,198.00
9.8.7	Design plain curtain cloth : local (6ft = 1 set)	Per Set	1,829.00	1,829.00	1,829.00	1,829.00
9.8.8	Curtain cloth : Foreign made (6ft = 1 set)	Per Set	2,837.00	2,837.00	2,837.00	2,837.00
9.8.9	Bed sheet , single : Local (plain)	Per Pcs	694.00	694.00	694.00	694.00
9.8.10	Bed sheet , single : Local (design)	Per Pcs	946.00	946.00	946.00	946.00
9.8.11	Bed sheet , semi double : Local (plain)	Per Pcs	1,198.00	1,198.00	1,198.00	1,198.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
9.8.12	Bed sheet , semi double : Local (design)	Per Pcs	1,324.00	1,324.00	1,324.00	1,324.00
9.8.13	Bed sheet , double : Foreign (plain)	Per Pcs	2,585.00	2,585.00	2,585.00	2,585.00
9.8.14	Bed sheet , Semi double : Foreign (design)	Per Pcs	3,531.00	3,531.00	3,531.00	3,531.00
9.8.15	Pillow : Foam	Per Pcs	820.00	820.00	820.00	820.00
9.8.16	Pillow : Cotton shimul	Per Pcs	1,734.00	1,734.00	1,734.00	1,734.00
9.8.17	Pillow cover cloth : Local (plain / design)	Per Pcs	315.00	315.00	315.00	315.00
9.8.18	Pillow cover cloth : Foreign (plain / design)	Per Pcs	883.00	883.00	883.00	883.00
9.8.19	Mosquito net : Local , single size	Per Pcs	631.00	631.00	631.00	631.00
9.8.20	Mosquito net : Local , double size	Per Pcs	1,135.00	1,135.00	1,135.00	1,135.00
9.8.21	Blanket , single : Local Made (single part)	Per Pcs	2,270.00	2,270.00	2,270.00	2,270.00
9.8.22	Blanket , single : Local Made (double part)	Per Pcs	2,333.00	2,333.00	2,333.00	2,333.00
9.8.23	Blanket , semi double : Local Made (single part)	Per Pcs	3,153.00	3,153.00	3,153.00	3,153.00
9.8.24	Blanket , semi Double : Local Made (double part)	Per Pcs	3,216.00	3,216.00	3,216.00	3,216.00
9.8.25	Blanket , double : Local Made (single part)	Per Pcs	3,531.00	3,531.00	3,531.00	3,531.00
9.8.26	Blanket , double : Local Made (double part)	Per Pcs	3,657.00	3,657.00	3,657.00	3,657.00
9.8.27	Blanket , single : Foreign Made (single part)	Per Pcs	4,099.00	4,099.00	4,099.00	4,099.00
9.8.28	Blanket , single : Foreign Made (double part)	Per Pcs	4,162.00	4,162.00	4,162.00	4,162.00
9.8.29	Blanket , semi double : Foreign Made (single part)	Per Pcs	5,044.00	5,044.00	5,044.00	5,044.00
9.8.30	Blanket , semi double: Foreign Made (double part)	Per Pcs	5,675.00	5,675.00	5,675.00	5,675.00
9.8.31	Blanket , double : Foreign Made (single part)	Per Pcs	8,575.00	8,575.00	8,575.00	8,575.00
9.8.32	Blanket , double : Foreign Made (double part)	Per Pcs	9,458.00	9,458.00	9,458.00	9,458.00
9.8.33	Blanket cover , single : Local	Per Pcs	820.00	820.00	820.00	820.00
9.8.34	Blanket cover , semi double : Local	Per Pcs	567.00	567.00	567.00	567.00
9.8.35	Blanket cover , double : Local	Per Pcs	820.00	820.00	820.00	820.00
9.8.36	Coir Mattress	Per Cft.	1,280.00	1,280.00	1,280.00	1,280.00
9.8.37	Jajim : Single	Per Sft.	2,270.00	2,270.00	2,270.00	2,270.00
9.8.38	Jajim : Semi double	Per Sft.	3,153.00	3,153.00	3,153.00	3,153.00
9.8.39	Jajim : Double	Per Sft.	3,594.00	3,594.00	3,594.00	3,594.00
9.8.40	Toshok:2" thick single(shimul with mixed cotton), 6kg	Per Sft.	3,279.00	3,279.00	3,279.00	3,279.00
9.8.41	Toshok:2" thick single(with mixed cotton), 6kg	Per Sft.	2,333.00	2,333.00	2,333.00	2,333.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
9.8.42	Toshok : Single, cloth & cotton (shimul), weight 12 kg	Per Pcs	6,305.00	6,305.00	6,305.00	6,305.00
9.8.43	Toshok : Single , cloth & cotton (karpash), weight 12 kg	Per Pcs	4,666.00	4,666.00	4,666.00	4,666.00
9.8.44	Toshok : Semi double, cloth & cotton (shimul), weight 16 kg	Per Pcs	4,792.00	4,792.00	4,792.00	4,792.00
9.8.45	Toshok : Semi Double, cloth & cotton (karpash), weight 16 kg	Per Pcs	4,862.00	4,862.00	4,862.00	4,862.00
9.8.46	Toshok : Double, cloth & cotton (shimul), weight 20 kg	Per Pcs	4,906.00	4,906.00	4,906.00	4,906.00
9.8.47	Toshok : Double, cloth & cotton (karpash), weight 20 kg	Per Pcs	5,044.00	5,044.00	5,044.00	5,044.00
9.8.48	Jajim : Single, cloth, coconut fiber & cotton (garments) weight 16 kg	Per Pcs	3,153.00	3,153.00	3,153.00	3,153.00
9.8.49	Jajim : Semi double, cloth, coconut fiber & cotton (garments) weight 22 kg	Per Pcs	4,036.00	4,036.00	4,036.00	4,036.00
9.8.50	Jajim : Double, cloth, coconut fiber & cotton (garments) weight 26 kg	Per Pcs	4,792.00	4,792.00	4,792.00	4,792.00
9.8.51	Plain velvet cloth	Per Yard	605.00	605.00	605.00	605.00
9.8.52	Design plain velvet cloth	Per Yard	1,072.00	1,072.00	1,072.00	1,072.00
9.8.53	Card velvet cloth	Per Yard	946.00	946.00	946.00	946.00
9.8.54	Markin cloth (coarse) (36" wide)	Per Yard	57.00	57.00	57.00	57.00
9.8.55	Markin cloth (thin) (36" wide)	Per Yard	57.00	57.00	57.00	57.00
9.8.56	Best quality cotton (garments)	Per Kg	124.00	124.00	124.00	124.00
9.8.57	Best quality cotton (shimul)	Per Kg	1,198.00	1,198.00	1,198.00	1,198.00
9.8.58	Best quality cotton (karpash)	Per Kg	441.00	441.00	441.00	441.00
9.8.59	Coconut fiber	Per Kg	116.00	116.00	116.00	116.00
9.8.60	Best quality various size KARMO foam	Per Cft	858.00	858.00	858.00	858.00
9.8.61	Best quality various size KARMO foam (rubber) (KARMO-280)	Per Cft	1,059.00	1,059.00	1,059.00	1,059.00
9.8.62	Best quality various size KARMO foam (rubber) (KARMO-2001)	Per Cft	1,450.00	1,450.00	1,450.00	1,450.00
9.8.63	Rexin : Aromatic brand	Per Yard	479.00	479.00	479.00	479.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
9.8.64	Rexin : Average , available	Per Yard	328.00	328.00	328.00	328.00
9.8.65	Rexin :Foreign made	Per Yard	1,072.00	1,072.00	1,072.00	1,072.00
9.8.66	Rope (jute)	Per Kg	113.00	113.00	113.00	113.00
9.8.67	Rope (nylon)	Per Kg	202.00	202.00	202.00	202.00
9.8.68	Sewing cord / strings	per no	13.00	13.00	13.00	13.00
9.8.69	Rubber solution	Per Kg	706.00	706.00	706.00	706.00
9.8.70	Chot (coarse) (36" wide)	Per Yard	66.00	66.00	66.00	66.00
9.8.71	Chot (thin) (36" wide)	Per Yard	40.00	40.00	40.00	40.00
9.8.72	Coil spring 6"	Per Doz.	303.00	303.00	303.00	303.00
9.8.73	Coil spring 5"	Per Doz.	265.00	265.00	265.00	265.00
9.8.74	Rubber belt	Per Yard	25.00	25.00	25.00	25.00
9.8.75	Jute belt	Per Yard	30.00	30.00	30.00	30.00
9.8.76	Tacks (boma kata) 1/2 ", 3/4 "	per lb.	227.00	227.00	227.00	227.00
9.8.77	Iron strip (pati)	Per Kg.	106.00	106.00	106.00	106.00
9.8.78	Top pin (1000 nos=1 packet)	per pkt	492.00	492.00	492.00	492.00
9.9	POLISH & PAINT MATERIALS					
9.9.1	Best quality sprit (JAMUNA Co. or equivalent accepted / approved by the engineer)					
9.9.1.1	Best quality Sprit (P/LB)	Per Liter	177.00	177.00	177.00	177.00
9.9.2	Best quality gala (Local made accepted / approved by the engineer)	Per Liter				
9.9.2.1	Gala Best quality (foreign accepted / approved by the engineer)	Per Kg.	2,333.00	2,333.00	2,333.00	2,333.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
9.9.2.2	Gala local (Local made accepted / approved by the engineer)	Per Kg.	1,324.00	1,324.00	1,324.00	1,324.00
9.9.3	Best quality wax (or equivalent brand accepted / approved by the engineer)					
9.9.3.1	Best quality wax	Per Kg.	858.00	858.00	858.00	858.00
9.9.4	Shidur (foreign accepted / approved by the engineer)	Per Kg	807.00	807.00	807.00	807.00
9.9.5	Karpa (foreign accepted / approved by the engineer)	Per Kg	757.00	757.00	757.00	757.00
9.9.6	Sand paper	Per Doz.	212.00	212.00	212.00	212.00
9.9.7	Water paper no. 120 (white) (ENGLAND, EU Countries or equivalent accepted / approved by the engineer)	Per Doz.	523.00	523.00	523.00	523.00
9.9.8	Water paper no. 120 (black) (ENGLAND, EU Countries or equivalent accepted / approved by the engineer)	Per Doz.	530.00	530.00	530.00	530.00
9.9.9	Emery paper	Each	32.00	32.00	32.00	32.00
9.9.10	Markin cloth (thin for polish)	Per Yard.	32.00	32.00	32.00	32.00
9.9.11	Chalk powder (ENGLAND, EU Countries or equivalent or equivalent brand accepted / approved by the engineer)	Per Kg	61.00	61.00	61.00	61.00
9.9.12	French powder	Per Kg.	76.00	76.00	76.00	76.00
9.9.13	Best quality Plaster / layer (allcorim) / red-oxide	Per Liter	328.00	328.00	328.00	328.00
9.9.14	Black-oxide	Per Liter	277.00	277.00	277.00	277.00
9.9.15	Zinc oxide	Per Kg.	227.00	227.00	227.00	227.00
9.9.16	Thinner kangaroo (SINGAPORE made or equivalent or equivalent brand accepted / approved by the engineer)	Per Liter	265.00	265.00	265.00	265.00
9.9.17	Tarpin oil	Per Liter	277.00	277.00	277.00	277.00
9.9.18	Hammer paint (or equivalent brand accepted / approved by the engineer)	Per Liter	404.00	404.00	404.00	404.00
9.9.19	Varnish paint (or equivalent brand accepted / approved by the engineer)	per lb.	214.00	214.00	214.00	214.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
9.9.20	Enamel paint (or equivalent brand accepted / approved by the engineer)	Per Liter	391.00	391.00	391.00	391.00
9.9.21	Varnish oil (or equivalent brand accepted / approved by the engineer) (14 liter =1tin)	per tin	4,792.00	4,792.00	4,792.00	4,792.00
9.9.22	Wood Varnishing : Egg shell / matt or equivalent.	Per Liter	353.00	353.00	353.00	353.00
9.9.23	Laquear polishing, materials should be EU Countries (for veneered board surface)	Per Sft.	227.00	227.00	227.00	227.00
9.9.24	Laquear polishing, materials others Countries (for veneered board surface)	Per Sft.	189.00	189.00	189.00	189.00
9.9.25	Laquear polishing, materials should be EU Countries (for solid wood surface)	Per Sft.	252.00	252.00	252.00	252.00
9.9.26	Laquear polishing, materials others Countries (for veneered board surface)	Per Sft.	214.00	214.00	214.00	214.00
9.10	STEEL MATERIALS					
9.10.1	M.S angle, size : 11/2"x11/2"x1/4"/ 1"x1"x1/8"	Per Ton	95,843.00	95,843.00	95,843.00	95,843.00
9.10.2	M.S flat bar, size : 11/2"x1/4" /1"x3/16"	Per Ton	88,277.00	88,277.00	88,277.00	88,277.00
9.10.3	M.S rod (plain) (size : 3/8" dia, 1/2" dia & 5/8" dia)	Per Ton	90,799.00	90,799.00	90,799.00	90,799.00
9.10.4	BPI sheet / plate 14 / 16 /18 / 20 SWG	Per Ton	170,248.00	170,248.00	170,248.00	170,248.00
9.10.5	BPI sheet / plate 22 / 24 SWG	Per Ton	172,140.00	172,140.00	172,140.00	172,140.00
9.10.6	S S sheet / plate 20 SWG	Per Ton	353,108.00	353,108.00	353,108.00	353,108.00
9.10.7	S S sheet / plate 22 / 24 SWG	Per Ton	359,413.00	359,413.00	359,413.00	359,413.00
9.11	PIPE					
9.11.1	M.S pipe size : 1/2" dia & 1.6 mm thickness.	Per Mtr	126.00	126.00	126.00	126.00
9.11.2	M.S pipe size : 1/2" dia & 2 mm thickness.	Per Mtr	132.00	132.00	132.00	132.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
9.11.3	M.S pipe size: 3/4" dia 1.6 mm thickness.	Per Mtr	139.00	139.00	139.00	139.00
9.11.4	M.S pipe size: 3/4" dia 2 mm thickness.	Per Mtr	166.00	166.00	166.00	166.00
9.11.5	M.S pipe size: 3/4" dia & 1.7 mm thickness.	Per Mtr	183.00	183.00	183.00	183.00
9.11.6	M.S pipe size: 3/4" dia & 2 mm thickness.	Per Mtr	194.00	194.00	194.00	194.00
9.11.7	M.S pipe size: 3/4" dia & 2.35 mm thickness.	Per Mtr	204.00	204.00	204.00	204.00
9.11.8	M.S pipe size: 1" dia & 2.35 mm thickness.	Per Mtr	277.00	277.00	277.00	277.00
9.11.9	M.S pipe size: 1" dia & 2.65 mm thickness.	Per Mtr	284.00	284.00	284.00	284.00
9.11.10	M.S pipe size: 1-1/4" dia & 2.00 mm thickness.	Per Mtr	195.00	195.00	195.00	195.00
9.11.11	M.S pipe size: 1-1/4" dia & 2.35 mm thickness.	Per Mtr	328.00	328.00	328.00	328.00
9.11.12	M.S pipe size: 1- 1/4" dia & 2.65 mm thickness.	Per Mtr	347.00	347.00	347.00	347.00
9.11.13	M.S pipe size: 1-1/2" dia & 2.65 mm thickness.	Per Mtr	460.00	460.00	460.00	460.00
9.11.14	M.S pipe, size: 1-1/2" dia & 2.90 mm thickness.	Per Mtr	473.00	473.00	473.00	473.00
9.11.15	M.S pipe, size: 2" dia & 2.35 mm thickness.	Per Mtr	467.00	467.00	467.00	467.00
9.11.16	M.S pipe, size: 2" dia & 2.65 mm thickness.	Per Mtr	549.00	549.00	549.00	549.00
9.11.17	M.S pipe, size: 2" dia & 2.90 mm thickness.	Per Mtr	567.00	567.00	567.00	567.00
9.11.18	G.I pipe, size: 12.5 mm inner dia & 2.65 mm thickness.	Per Mtr	281.00	281.00	281.00	281.00
9.11.19	G.I pipe, size: 16 mm inner dia & 2.35 mm thickness.	Per Mtr	315.00	315.00	315.00	315.00
9.11.20	G.I pipe, size: 20 mm inner dia & 2.65 mm thickness	Per Mtr	368.00	368.00	368.00	368.00
9.11.21	G.I pipe, size: 25 mm inner dia & 2.9 mm thickness.	Per Mtr	501.00	501.00	501.00	501.00
9.11.22	G.I pipe, size: 40 mm inner dia & 3.20 mm thickness.	Per Mtr	819.00	819.00	819.00	819.00
9.11.23	G.I pipe, size: 50 mm inner dia & 3.20 mm thickness.	Per Mtr	1,034.00	1,034.00	1,034.00	1,034.00
9.11.24	G.I pipe, size: 62.65 mm inner dia & 4 mm thickness	Per Mtr	1,638.00	1,638.00	1,638.00	1,638.00
9.11.25	G.I pipe, size: 75 mm inner dia & 4 mm thickness	Per Mtr	1,721.00	1,721.00	1,721.00	1,721.00
9.11.26	G.I pipe, size: 100 mm inner dia & 4 mm thickness	Per Mtr	2,494.00	2,494.00	2,494.00	2,494.00
9.11.27	G.I pipe, size: 125 mm inner dia & 3.4 mm thickness	Per Mtr	2,264.00	2,264.00	2,264.00	2,264.00
9.11.28	G.I pipe, size: 150 mm inner dia & 3.4 mm thickness	Per Mtr	2,535.00	2,535.00	2,535.00	2,535.00
9.11.29	G.I pipe, size: 200 mm inner dia & 3.75 mm thickness	Per Mtr	2,837.00	2,837.00	2,837.00	2,837.00
9.11.30	Stainless Steel pipe size: 50 mm dia & 2 mm thickness	Per Mtr	931.00	931.00	931.00	931.00
9.11.31	Stainless Steel pipe size: 40 mm dia & 2 mm thickness	Per Mtr	703.00	703.00	703.00	703.00
9.11.32	Stainless Steel pipe size: 25 mm dia & 2 mm thickness	Per Mtr	451.00	451.00	451.00	451.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
9.11.33	Stainless Steel pipe size: 20 mm inner dia & 2 mm thickness	Per Mtr	314.00	314.00	314.00	314.00
9.11.34	Stainless Steel pipe size: 12 mm inner dia & 2 mm thickness	Per Mtr	170.00	170.00	170.00	170.00
9.12	CARRIAGE OF FURNITURE					
	Carriage of furniture except loading, unloading & setting charge at site as per direction of the engineer. Centre considered as DHAKA (zero point). This percentage of charge will be added with the rate of furniture.					
9.12.1	Inside Dhaka City Corporation	Each	3.00%	3.00%	3.00%	3.00%
9.12.3	0.00 to 100.00 Km	Each	3.25%	3.25%	3.25%	3.25%
9.12.4	0.00 to 200.00 Km	Each	3.50%	3.50%	3.50%	3.50%
9.12.5	0.00 to 300.00 Km	Each	3.75%	3.75%	3.75%	3.75%
9.12.6	0.00 to 400.00 Km	Each	4.00%	4.00%	4.00%	4.00%
9.12.7	0.00 to 450.00 Km	Each	4.25%	4.25%	4.25%	4.25%
9.12.8	District town to upazila	Each	1.00%	1.00%	1.00%	1.00%
9.12.9	For south district (due to ferry & toll fare)	Each	1.00%	1.00%	1.00%	1.00%
9.13	LOADING & UNLOADING OF FURNITURE					
	Loading & unloading charge at site as per direction of the engineer. This percentage of charge will be added with the rate of furniture.					
9.13.1	Mini Truck	Per Truck	0.75%	0.75%	0.75%	0.75%
9.13.2	Medium Truck	Per Truck	1.00%	1.00%	1.00%	1.00%
9.13.3	Large Truck	Per Truck	1.25%	1.25%	1.25%	1.25%
9.14	SETTING OF FURNITURE					
	Setting charge at site as per direction of the Engineer. This percentage of charge will be added with the rate of furniture.					
9.14.1	Up to 1st Floor	Each	0.50%	0.50%	0.50%	0.50%
9.14.2	Up to 3rd Floor	Each	0.75%	0.75%	0.75%	0.75%

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
9.14.3	Up to 5th Floor	Each	1.00%	1.00%	1.00%	1.00%
9.14.4	For each Additional Floor	Each	0.25%	0.25%	0.25%	0.25%

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Subhead-10

Digital Conference & Multimedia Systems

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.1	DIGITAL CONFERENCE SYSTEM (Wired)					
1.1.1	CENTRAL UNIT Supply, Installation, testing and commissioning of the central unit with digital display (integrated controller & power supply). The central unit shall have the following technical features or equivalent : Web browser-system set-up: CU configuration, delegate set up, seat assignment to the seat, input / output control. Quantity Component 1 CCSD-CU Control Unit 1 Mains power cord 1 24 VDC power supply 2 Sets of chairperson's buttons for a Discussion Device 1 Exchange tool for buttons 1 Set of feet for table top use 1 Set of 19" 1U mounting brackets 1 Safety instructions 1 Installation note 1 DVD with operation manual and supporting tools Specification • Front of unit: 1 x 3.5 mm (.14 in) stereo headphone socket 1 x USB connector • Rear of unit: 1 x micro USB connector, 4 x RCA outputs for individual microphone recording • Built in recorder • 1 x 4-pole circular female 24 VDC power input Connector • 2 x 6-pole circular female connectors for loop-through connection of 4 Discussion Devices per trunk					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Mechanical Mounting : Tabletop Temperature range: 5° to 45° C Certifications : The system in general conforms to the IEC 6914 standard. Approvals: CE, WEEE1, UL, FCC, CSA, ICES-3, EPS1, CCC1, BSMI1, EAC Warranty: Minimum 1 Year Accepted/approved by the engineer-in-charge.	Each	197,740.00	197725	197682	197682
1.1.2	TABLE TOP CHAIRMAN UNIT Supply, Installation, testing and commissioning of table top chairman unit with microphone and built-in loudspeaker. The chairman unit shall have the following technical features or equivalent : Electrical Power Consumption: 9W to 2W Frequency Response: 3 Hz to 2 KHz THD: <.5% S/N : >93 dBA Sampling Rate: 44.1 KHz Acoustical • Loudspeaker nominal output: 72 dB SPL • Participants loudspeaker frequency response: 2 Hz to 16 kHz (acoustical) • Microphone polar pattern: Cardioid • Participants microphone frequency response: 125 Hz to 15 kHz • Microphone nominal input: 85 dB SPL Unique patent pending possible-to-speak indicator Plug and play functionality for ensuring fast installation and reconfiguration time Immunity to mobile phone interference Controls and Indicators					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	• Microphone button, • Color-coded LED indicator above microphone button for showing the following states: microphone on request-to-speak, and possible-to-speak, • Light-ring indicator in head of microphone • Rotary thumbwheel on side of device for adjusting the headphones volume • Concealed slide-switch at base of Discussion Device for configuring the Discussion Device as a 'participant Discussion Device' or 'chairperson's Discussion Device', Chairperson's configuration only – separate microphone button and 'priority button'.. Connections • 1 x 6-pole circular female connector with cable • locking recess – for loop-through connection of Discussion Devices • 1 x 3.5 mm (.14 in) stereo headphones socket on side of device • Minimum 1 x 2 m (78.7 in) cable with a 6-pole circular male connector with cable lock Certifications: The discussion unit conforms in general to the IEC 6914 standard. Approvals CE, WEEE1, UL, FCC, CSA, ICES-3 Warranty: 1 Year Accepted/approved by the engineer-in-charge.	Each	41,679.00	41667	41625	41625
1.1.3	TABLE TOP DELEGATE UNIT Supply, installation, testing and commissioning of table top delegate unit with microphone and built-in loudspeaker. The delegate unit shall have the following technical features or equivalent :					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Electrical Power Consumption : 9W to 2W Frequency Response : 3 Hz to 2 KHz THD : <.5% S/N : >93 dBA Sampling Rate : 44.1 KHz Unique patent pending possible-to-speak indicator Plug and play functionality for ensuring fast installation and reconfiguration times Immunity to mobile phone interference Controls and Indicators • Microphone button • Color-coded LED indicator above microphone button for showing the following states: microphone on, request-to -speak, and possible-to-speak • Light-ring indicator in head of microphone • Rotary thumbwheel on side of device for adjusting the headphones volume • Concealed slide-switch at base of Discussion Device for configuring the Discussion Device as a ‘participant Discussion Device ’ or ‘chairperson’s Discussion Device’, Chairperson’s configuration only – separate microphone button and ‘priority button’. Connections • 1 x 6-pole circular female connector with cable • locking recess – for loop-through connection of Discussion Devices • 1 x 3.5 mm (.14 in) stereo headphones socket on side of device • Minimum 1 x 2 m (78.7 in) cable with a 6-pole circular male connector with cable lock Mechanical • Mounting Tabletop (portable or fixed) • Material (top) Plastic ABS+PC					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Interconnections LAN: Two RJ45 female sockets with auto-termination. Mechanical Mounting: Tabletop. Temperature range: 5° to 45° C. Certifications The discussion unit conforms in general to the IEC 6914 standard Approvals CE, KC, CCC, cUL, TUV Warranty: Minimum 1 Year Accepted/approved by the engineer-in-charge.	Each	-	4136	4995	4995
1.1.4	EXTENSION UNIT Supply, Installation, testing and commissioning of the Extension Unit The Extension Unit shall have the following technical features or equivalent : Electrical • Supply Voltage Adaptor: 1 to 24 VAC, 5Hz • Current Consumption Voltage Adaptor: 1.9 A (1 VAC) to 1A 24 (VAC) • DC Voltage Control Unit: 24V, 6. A • Maximum Number of Discussion Devices per Extension Unit: 4 Discussion Devices per trunk/ tap-off 85 Discussion Devices in total 24 V. Max 5.2 A (short circuited nrotected) Automatic Power up: The extension unit is switched on or off automatically with the control unit					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Controls and indicators • Front Panel: 1x power on/off Connections • Rear Panel: - 1x 2 meter cable with 6 pole circular male connector for connection to the Control Unit or previous component in the daisy-chain - 1x 6 pole circular female connector for trunk connection of the devices (maximum of 4 devices per trunk) - 2x 6 pole circular female connectors for tap-off connection of the Discussion Devices (maximum of 4 Discussion Devices per tap-off, with a maximum of 85 Discussion Devices per Extension Unit) - 1x 4 pole circular female 24 VDC power input connector Environmental Operating temperature : 5° to 45° C Approvals CE, WEEE, UL, FCC, CSA, KCC, RCM, EAC Warranty: Minimum 1 year Accepted/approved by the engineer-in-charge.	Each	197,740.00	197725	197682	197682
1.1.5	EXTENSION CABLE Supply, Installation, testing and commissioning of extension cable. The extension cable shall have the following technical features or equivalent : Cable terminated at both ends with a molded six-pole circular, Connector (male and female).The extension to the type number, Gives the length of the cable. Technical Specifications Dimensions: 6mm Material: PVC 5m (16.5 feet), terminated with connectors					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Cable terminated at both ends with a molded six-pole circular Connector (male and female) The extension to the type number Gives the length of the cable. Technical Specifications Dimensions: 6mm Material: PVC Minimum 1m (33. feet), terminated with connector Warranty: Minimum 1 Year Accepted/approved by the engineer-in-charge.	Each	25,853.00	2584	25799	25799
1.2	DIGITAL CONFERENCE SYSTEM (WIRELESS)					
1.2.1	Wireless Conference Access Point with web server Supply, Installation, testing and commissioning of Wireless Conference Access Point The Wireless Conference Access Point shall have the following technical features or equivalent: Electrical Supply Voltage: 24 V (24V-15W ACDC adapter), 48 V (PoC) Power Consumption: 7W to 1W Ethernet Port: LAN, TCP/IP Modulation: OFDM Transmitting Power: <2dBm					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Connectivity Power connector RJ45 LAN connection, RJ45in from engine, RJ45 out to next access Point Capacity: 248 delegate or chairman units Range: 3 m (Minimum) Modulation: OFDM RF: Quad-Band 2.4 GHz and 5 GHz Security: 3 layers with 128 bit AES encryption Control: Built in web server for Browser based control from any device Camera control integration capable Two overload activity LEDs Three R-SMA antenna connectors 6.3 mm jack balanced analog in and out CE Certified Operating temperature: 5° - 5°C Material: Aluminium Warranty: Minimum 1 Year Accepted/approved by the engineer-in-charge	Each	341,190.00	341172	341129	341129
1.2.2	Wireless Conference Chairman Unit Supply, Installation, testing and commissioning of the Wireless Conference Chairman Unit The Wireless Conference Chairman Unit shall have the following technical features or equivalent :					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	• Wireless chairman unit with built-in loudspeaker, microphone connector, prior and next-in-line button • GSM immune gooseneck microphone of 4 cm with bi-colour led ring indication (red / green) • Windscreen included • Lithium-ion Battery pack for wireless Conference unit • Microphone on/off or request-to-speak button with two signaling LEDs • Two headphone outputs • One headphone volume adjustment; Priority button; Next-in-line button • Battery and range status color LED • CE Certified • Material: PC/ABS • Audio quality: 16 bit digital • Security: Three layers with 128 bit AES encryption • Display type: OLED 128 x 64 or equivalent • Operating temperature: -5 to 55°C • Battery capacity: Minimum 66 mAh • Battery autonomy: Minimum 28 hours on single charge • Built-in high-quality loudspeaker which is automatically muted when the microphone is active, to prevent acoustic feedback. Warranty: Minimum 1 Year Accepted/approved by the engineer-in-charge.	Each	154,548.00	154534	15449	15449
1.2.3	Wireless Conference Delegate Unit Supply, Installation, testing and commissioning of the Wireless Conference Delegate Unit The Wireless Conference Delegate Unit shall have the following technical features or equivalent :					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	• Wireless delegate unit with built-in speaker and microphone connector • GSM immune gooseneck microphone of 4 cm with bi-colour led ring indication (red / green) • Windscreen included • Lithium-ion Battery pack for wireless Conference unit • Microphone on/off or request-to-speak button with two signaling LEDs • Two headphone outputs • One headphone volume adjustment • Next-in-line button • Battery and range status color LED • CE Certified • Material: PC/ABS • Audio quality: 16 bit digital • Security: Three layers with 128 bit AES encryption • Display type: OLED 128 x 64 or equivalent • Operating temperature: -5 to 55°C • Battery capacity: Minimum 66 mAh • Battery autonomy: Minimum 28 hours on single charge • Built-in high-quality loudspeaker which is automatically muted when the microphone is active, to prevent acoustic feedback Warranty: Minimum 1 Year Accepted/approved by the engineer-in-charge.	Each	144,459.00	144444	14442	14442
1.2.4	Wireless Conference Battery Charging Tray Charging tray for 6 battery packs 19" rack mountable Material: PC/ABS Supply Voltage: 1 – 23 VAC					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Output power: 1 W Operating temperature : -1 to 6°C Loop-through mains connector CE Certified Warranty: Minimum 1 Year Accepted/approved by the engineer-in-charge.	Each	126,173.00	126159	126116	126116
1.2.5	Two Nos Tracking Camera for Conference System Including Software Supply, Installation, testing and commissioning of Two Nos Tracking Camera for Conference System Including Software The Conference Camera shall have the following technical features or equivalent : Sensor: 1/2.8" 2 MP CMOS or above Video Output: 18p 6 / 59.94 / 5 fps, 18i 6 / 59.94 / 5 fps, 18p 3 / 29.97 / 25 fps, 72p 6 / 59.94 / 5 fps Optical Zoom: 2× Panning Angle : -17° ~ +17° Tilting Angle: -3° ~ +9° Preset Positions: 128 Video Output (HD) Interface: 3G-SDI PoE: PoE+ (IEEE802.3at) Camera Control Interface: RS-232 / RS-422 / Ethernet Camera Control Protocol: VISCA / PELCO D Video S/N Ratio: > 5dB Shutter Speed : 1/1 ~ 1/1, sec Focal Length: f = 4.7 ~ 94 mm 3D NR : Yes Horizontal Viewing Angle: 63° or above Aperture: F1.6 ~ 3.5 Minimum Illumination: 1. lux (F1.6, 5 IRE, 3fps) Minimum Object Distance: 1.2m Gain Control: Auto, manual					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	White Balance: Auto, indoor, outdoor, one-push, manual Exposure Control: Auto, manual Image Flip : Yes Audio Input : Line In / MIC In Audio Output: Ethernet, SDI and HDMI Camera Software • Software for setting up tracking camera to current speaker • Automatic camera tracking works by creating camera presets for each microphone location in the room • With the software, the installer can pan, tilt, and zoom the camera to different positions and can save these positions as camera presets that can be recalled automatically when microphones become active • Two or more cameras are used to ensure the current view is shown until the second camera has moved and is ready to show its view. This ensures a smooth transition of video without showing the camera motion during the pan, tilt, or zoom maneuvers • A camera typically takes only a second or two to move to a new position before the video switcher transitions to that camera view. Broadcast Device Total Video Inputs : 8 (Minimum) Total Video Outputs : 8 (Minimum) SDI Rates : 27Mb, 1.5G, 3G SDI Video Inputs : 4 x 1-bit SD/HD switchable. 2 channel embedded audio SDI Program Output : 5 × 1-bit SD/HD switch-able					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	SDI Audio Outputs : 2 Chembbed into SDI output SD Video Standards : 525i59.94 NTSC 4:3 or 16:9, 625i5 PAL 4:3 or 16:9 HD Video Standards : 72p5, 72p59.94 18p23.98, 18p24, 18p25, 18p29.97, 18p5, 18p59.94, 18i5, 18i59.94 SDI Compliance : SMPTE 259M, 292M and 424M Video Sampling : 4:2:2 1-bit Color Precision : Color Space : 4:2:2 YUV Power Supply : 1 x internal 11 – 24V AC Operating Temperature : 5° C to 4° C (41° - 14°F) Storage Temperature : -1° to 6° C (14° to 14°F) Relative Humidity : % to 9% non-condensing Warranty : Minimum 1 Year Accepted/approved by the engineer-in-charge.	Each	1,514,012.00	1513972	1513929	1513929
1.2.5.1	Integrated Camera Supply, Installation, testing and commissioning of integrated camera which has the following technical specification or equivalent: Sensor : 1/2.8" 2 MP CMOS or above Video Output : 18p 6 / 59.94 / 5 fps, 18i 6 / 59.94 / 5 fps, 18p 3 / 29.97 / 25 fps, 72p 6 / 59.94 / 5 fps Optical Zoom: 2× Panning Angle: -17° ~ +17° Tilting Angle: -3° ~ +9° Preset Positions: 128					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Video Output (HD) Interface : 3G-SDI PoE: PoE+ (IEEE802.3at) Camera Control Interface: RS-232 / RS-422 / Ethernet Camera Control Protocol : VISCA / PELCO D Video S/N Ratio: > 5dB Shutter Speed: 1/1 ~ 1/1, sec Focal Length: f = 4.7 ~ 94 mm 3D NR: Yes Horizontal Viewing Angle: 63° Aperture: F1.6 ~ 3.5 Minimum Illumination: 1. lux (F1.6, 5 IRE, 3fps) Minimum Object Distance: 1.2m Gain Control: Auto, manual White Balance: Auto, indoor, outdoor, one-push, manual Exposure Control: Auto, manual Focus System: Auto, manual Image Flip: Yes Audio Input : Line In / MIC In Audio Output: Ethernet, SDI and HDMI Warranty : Minimum 1 Year Accepted/approved by the engineer-in-charge.	Each	315,275.00	315269	315269	315269
1.3	MULTIMEDIA PROJECTOR					
1.3.1	Supply, installation, testing, commissioning multimedia projector including all necessary accessories & Warranty/Service Support of following technical specification or equivalent: Projection Technology: RGB liquid crystal shutter projection system (3LCD) Brightness: 5,lm or above Connectivity: Network: Wired LAN: RJ45 x 1 Wireless : Optional Analog Input : D-Sub 15Pin: 2 (1 Blue, 1 Black) Composite : 1Digital Input : HDMI: 2 HDBASET (RX): N/A Output Terminal: D-Sub 15Pin: 1 (Black)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Audio Input : RCA (White/Red): 1 Stereo Mini Jack: 2Audio Output: Stereo Mini Jack: 1Control USB Type B: 1 (for USB Display, Mouse, K/B, Control, Firmware Update, Copy OSD Settings) Contrast Ratio: 15,:1 Screen Size (Projected Distance): Zoom : Wide: 5” - 3” [1.46 - 8.95 m] Zoom: Tele: 5” -3” [2.43 - 14.79 m] Operating Temperature: Below 2,286m / 7,5ft: 5 - 4 °C <41 - 14 °F> Above 2,286m / 7,5ft (w/ High Altitude Mode): 5 - 35 °C <41 - 95 °F> Sound Output: 16W Power Consumption: (22 - 24V) Lamp On (Normal/Eco) : 45W / 323WNetworked Standby (maximum) Energy Saving: 2.41W / .31W Fan Noise (Normal/Eco) : 39dB / 29dB LCD: Size: .76” (D1, C2 Fine) Native Resolution: WUXGA (192 x 12) Projection Lens: Type: Optical Zoom (Manual) / Focus (Manual) F-Number: 1.5 - 2. Focal Length : 23 - 38.4 mm Zoom Ratio: 1 - 1.6 Throw Ratio: 1.38 - 2.28 (Wide to Tele)Lamp: Type: Lamp Life (Normal / Eco)*1: 5, / 1, hours (Minimum) Suitable for use in tropical country like BANGLADESH. Complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Warranty : Minimum 1 Year Accepted/approved by the engineer-in-charge.	Each	265,083.00	264964	264536	264536
1.3.2	Supply, installation, testing, commissioning multimedia projector including all necessary accessories & Warranty/Service Support of following technical specification or equivalent:					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Projection Technology: 3LCD Technology, RGB liquid crystal shutter LCD Panel: .59 inch with MLA (D9) Image Size(Projected Distance): 33" to 32" 1.68 m - 2.2 m (6 inch screen) Projector Lens: Optical Lamp Type: UHE, 21 W, 6, h durability, 1, h durability (economy mode) Native Resolution: WXGA, 128 x 8, 16:1 Brightness: 3,3 lm or above Contrast Ratio: 15, : 1 Noise Level: 37 / 28 dB Connectivity: USB 2. Type A, USB 2. Type B, VGA in, HDMI in, Composite in, Cinch audio in, Wireless LAN IEEE 82.11b/g/n (optional) Environment: Temperature Operation : 5° C - 35° C, Storage -1° C - 6° C ; Humidity Operation: 2% - 8%, Storage 1% - 9% Sound Output: 2 Watt Power: 282 Watt, 23 Watt (economy), .2 Watt (standby) Included Accessories: Main unit, Power cable, Quick Start Guide, Remote control incl. batteries, User manual (CD),VGA cable Advanced Features: AV mute slide, Automatic keystone correction, Built-in speaker, Horizontal and vertical keystone correction, Long lamp life, Quick Corner Suitable for use in tropical country like BANGLADESH.Complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Warranty : Minimum 1 Year Accepted/approved by the engineer in charge	Each	57,002.00	56887	56458	56458
1.4	MULTIMEDIA SCREEN					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installation, testing, commissioning multimedia projector screen including all necessary accessories & Warranty/Service Support of following technical specification or equivalent:					
1.4.1	5' x 5'					
1.4.1.1	Tripod (High Contrast Gray Screen)	Each	3,783.00	3782	3778	3778
1.4.1.2	Manual wall / ceiling screen	Each	3,657.00	3656	3653	3653
1.4.1.3	Motorized/ Electric screen	Each	8,323.00	8322	8318	8318
1.4.2	6' x 6'					
1.4.2.1	Tripod (High Contrast Gray Screen)	Each	4,036.00	434	44	44
1.4.2.2	Manual wall / ceiling screen	Each	-	3782	3778	3778
1.4.2.3	Motorized/ Electric screen	Each	9,584.00	9583	9579	9579
1.4.3	7' x 7'					
1.4.3.1	Tripod (High Contrast Gray Screen)	Each	8,197.00	8196	8192	8192
1.4.3.2	Manual wall / ceiling screen	Each	6,936.00	6935	6931	6931
1.4.3.3	Motorized/ Electric screen	Each	13,368.00	13366	13363	13363
1.4.4	8' x 8'					
1.4.4.1	Tripod (High Contrast Gray Screen)	Each	11,476.00	11475	1147	1147
1.4.4.2	Manual wall / ceiling screen	Each	9,458.00	9457	9454	9454
1.4.4.3	Motorized/ Electric screen	Each	15,890.00	15889	15885	15885
1.4.5	1'x7.5'					
1.4.5.1	Manual wall / ceiling screen (Manual 15" Diagonal)	Each	11,728.00	11726	11723	11723
1.4.5.2	Motorized/ Electric screen (Motorized 15" Diagonal)	Each	20,934.00	2933	2929	2929
1.4.6	12'x9'					
1.4.6.1	Motorized/ Electric screen (Motorized 18" Diagonal)	Each	44,265.00	44262	44258	44258
1.4.7	14'x14'					
1.4.7.1	Motorized/ Electric screen (Motorized 238" Diagonal)	Each	78,314.00	7832	7838	7838
1.4.8	16'x16'					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.4.8.1	Motorized/ Electric screen (Motorized 272" Diagonal)	Each	151,458.00	151453	15145	15145
1.5	PROFESSIONAL DISPLAY SOLUTION (INDOOR)					
1.5.1.1	Interactive Display					
1.5.1.1	Supply, installation, testing, commissioning of 65 Inch All in One Interactive Display including all necessary accessories & Warranty/Service Support of following technical specification or equivalent					
	Panel Screen Size: 65 inch Panel Technology: IPS Back Light Type: M+, Direct Aspect Ratio : 16:9 Native Resolution: 3,84 X 2,16 (UHD) Brightness: Typ: 35 cd/m2 (W/Protection Glass) Contrast Ratio: 1,2:1, Viewing Angle (HXV) : 178 X 178 (minimum) Response Time: 9 ms (Gto G) Life Time (Typ): 3, Hrs (Min) Operation Hours: 16Hrs Orientation: Landscape Connectivity (Input) Video/Audio: HDMI (3) RGB / Audio In, External control: RS232C In, RJ45, USB: USB 2. (3, Front : 2ea, Bottom side: 1ea, Only for software update), USB 3. (3). Touch Out(USB2..B Type) Connectivity (Output) Video/Audio: HDMI (1), Optical Output / Audio Out Mechanical Specification Mount Interface: 6 X 4 Key Features					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	HW: Internal Memory (16GB), SoC (Hisi 811, Dual core A73+Dual core A53), DDR(3GB) Wi-Fi(Built-in, Slot type) Power Indicator, Local Key Operation(1, Power button) SW: Android 8. or updated ENVIRONMENT CONDITIONS Operation Temperature: °C to 4 °C, Operation Humidity: 1 % to 8 % POWER Power Supply: 1-24V~, 5Hz Power Type: Built-In Power Power Consumption (Maximum): 24W / 28W SOUND Speaker: Built in 24W (12W + 12W) STANDARD (CERTIFICATION) Safety: UL / cUL / CB, EMC: FCC Class "A" / CE, ErP / Energy Star: Yes / No MEDIA PLAYER COMPATIBILITY OPS type compatible: Yes ACCESSORIES Basic: Power Cord 3 M*1, USB Cable (Type A-Type B) 5 M*1, HDMI Cable 3 M*1, Writing Pen*2pcs, User Manual, QSG, Remote Control SPECIAL FEATURES Embedded Writing Software: Yes TOUCH SPECIFICATIONS					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Touch type: IR, Available object size for touch: Ø3 mm ↑ Response Time: 6ms ↓ (Android) / 1ms ↓ (Windows) Accuracy: ±1.5mm Interface: USB 2. Protection Glass Thickness: 4T (Anti-Glare) Protection Glass Transmission: 87% Operating System Support: Windows 7/8/1/ WindowsXP/Linux/ Mac/ Android (WindowsXP/Linux/Mac Support one point touch) Multi touch point: Max 2 Point Warranty : Minimum 1 Year Accepted/approved by the engineer in charge	Each	Unit rate(say)(Tk:)	684836	684832	684832
1.5.1.2	Supply, installation, testing, commissioning of 75 Inch All in One Interactive Display including all necessary accessories & Warranty/Service Support of following technical specification or equivalent. Panel Screen Size: 75 inch Panel Technology: IPS Back Light Type: M+, Direct, Aspect Ratio: 16:9 Native Resolution: 3,84 X 2,16 (UHD) Brightness: Typ:33 cd/m2 (W/Protection Glass) Contrast Ratio: 1,1 : 1 Viewing Angle (HXV): 178 X 178 or above Response Time: 8 ms (Gto G), Life Time (Typ): 3, Hrs (Min) Operation Hours: 16Hrs (Minimum) Orientation: Landscape Connectivity (Input)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Video/Audio: HDMI (3), RGB / Audio In, External control: RS232C In, RJ45 USB: USB 2. (3, Front : 2ea, Bottom side: 1ea, Only for software update), USB 3. (3), Touch Out(USB2., B Type) (2) Connectivity (Output) Video/Audio: HDMI (1), Optical Output / Audio Out Mechanical Specification VESATM Standard Mount Interface: 8 X 4 Key Features HW: Internal Memory (16GB), SoC (Hisi 811, Dual core A73+Dual core A53), DDR(3GB), Wi-Fi(Built-in, Slot type), Power Indicator, Local Key Operation(1, Power button), SW: Android 8. or updated ENVIRONMENT CONDITIONS Operation Temperature: °C to 4 °C, Operation Humidity: 1 % to 8 % POWER Power Supply: 1-24V~, 5 Hz Power Type: Built-In Power Power Consumption(Typ./Max) : 26W / 3W SOUND Speaker: Built in 24W (12W + 12W) STANDARD (CERTIFICATION) Safety: UL / cUL / CB, EMC: FCC Class "A" / CE, ErP / Energy Star: Yes / No MEDIA PLAYER COMPATIBILITY OPS type compatible: Yes ACCESSORIES Basic: Power Cord 3 M*1, USB Cable (Type A-Type B) 5 M*1, HDMI Cable 3 M*1, Writing Pen*2pcs, User Manual, QSG, Remote Control SPECIAL FEATURES Embedded Writing Software: Yes TOUCH SPECIFICATIONS					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Touch type: IR Available object size for touch: Ø3 mm ↑ Response Time: 6ms ↓ (Android) / 1ms ↓ (Windows) Accuracy: ±1.5mm Interface : USB 2. Protection Glass Thickness: 4T (Anti-Glare) Protection Glass Transmission: 87% Operating System Support: Windows 7/8/1/ WindowsXP/ Linux/Mac/ Android (WindowsXP/Linux/Mac Support one point touch), Multi touch point: Max 2 Point Warranty : Minimum 1 Year Accepted/approved by the engineer in charge	Each	927,409.00	953124	95313	95313
1.5.1.3	Supply, installation, testing, commissioning of 86 Inch All in One Interactive Display including all necessary accessories & Warranty/Service Support of following technical specification or equivalent. Panel Screen Size: 86 inch Panel Technology: IPS Back Light Type: RGB, Direct Aspect Ratio: 16:9 Native Resolution: 3,84 X 2,16 (UHD) Brightness :Tpy:33 cd/m2 (W/Protection Glass) Contrast Ratio: 1,1 : 1 Viewing Angle (HXV) : 178 X 178 (minimum) Response Time : 8 ms (Gto G) Life Time (Typ): 3, Hrs (Min) Operation Hours: 16Hrs Orientation: Landscape Connectivity (Input) Video/Audio: HDMI (3), RGB / Audio In External control: RS232C In, RJ45 USB: USB 2. (3, Front : 2ea, Bottom side: 1ea, Only for software update), USB 3. (3). Touch Out(USB2..B Type) (2) Connectivity (Output)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Video/Audio: HDMI (1), Optical Output / Audio Out Mechanical Specification VESATM Standard Mount Interface: 8 X 6 Key Features HW: Internal Memory (16GB), SoC (Hisi 811, Dual core A73+Dual core A53), DDR(3GB), Wi-Fi(Built-in, Slot type), Power Indicator, Local Key Operation(1, Power button), SW: Android 8. or updated ENVIRONMENT CONDITIONS Operation Temperature: °C to 4 °C, Operation Humidity: 1 % to 8 % POWER Power Supply: 1-24V~, 5 Hz Power Type: Built-In Power Power Consumption(Typ./Max): 4W / 45W SOUND Speaker: Built in 24W (12W + 12W) STANDARD (CERTIFICATION) Safety : UL / cUL / CB, EMC: FCC Class "A" / CE, ErP / Energy Star: MEDIA PLAYER COMPATIBILITY OPS type compatible: Yes ACCESSORIES Basic : Power Cord 3 M*1, USB Cable (Type A-Type B) 5 M*1, HDMI Cable 3 M*1; Writing Pen*2pcs, User Manual, QSG, Remote Control SPECIAL FEATURES Embedded Writing Software: Yes TOUCH SPECIFICATIONS					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Touch type: IR Available object size for touch : Ø3 mm ↑ Response Time : 6ms ↓ (Android) / 1ms ↓ (Windows) Accuracy: ±1.5mm Interface: USB 2. Protection Glass Thickness: 4T (Anti-Glare) Protection Glass Transmission: 87% Operating System Support: Windows 7/8/1/ WindowsXP/Linux/Mac/Android (WindowsXP/ Linux/Mac Support one point touch) Multi touch point: Maximum 2 Point Warranty : Minimum 1 Year Accepted/approved by the engineer in charge	Each	1,203,781.00	123717	1237157	1237157
1.5.2	Indoor LED Video Wall (Category A)					
1.5.2.1	Supply, installation, testing and commissioning of Indoor LED Video Wall Display including Controller, Processor & Mounting accessories of following specifications or equivalent: Pixel Pitch: Maximum 2.97mm Brightness: Minimum 1 nits Brightness Pixel Density: Minimum 112,896 (pixels/m2) Visual Viewing Angle (Horizontal/Vertical) : 16/16 or above Power Supply (V) : 1 to 24V AC 5Hz Frame Rate (Hz): 5/6 Refresh Rate (Hz): Minimum 288 Operating Temperature: 10 to +45°C IP Rating (Front / Rear) : IP3 / IP3 minimum Certification: CE,FCC,ETL Warranty : Minimum 1 year Brand: product of South Korea, Japan, EU Countries or equivalent accepted/approved by the engineer-in-charge.	Per Sqft	63,254.00	656	653	653

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.5.2.2	Supply, installation, testing and commissioning of Indoor LED Video Wall Display including Controller, Processor & Mounting accessories of following specifications or equivalent: Pixel Pitch: Maximum 1.25mm Brightness: Minimum 6 nits to 12 nits Brightness Pixel Density: Minimum 64, (pixels/m2) Visual Viewing Angle (Horizontal/Vertical) : 17/17 or above Power Supply (V): 1 to 24 V AC 5 Hz Frame Rate (Hz): 5/6 Refresh Rate (Hz): Minimum 384 IP Rating (Front / Rear): IP2 / IP2 Minimum Certification: ISO, RoHS, Safety 695-1, EMC Class B Warranty : Minimum 1 year Brand: product of South Korea, Japan, EU Countries or equivalent accepted/approved by the engineer-in-charge.	Per Sqft	325,411.00	334434	33444	33444
1.5.3	Indoor LED Video Wall (Category B)					
1.5.3.1	Supply, installation, testing and commissioning of Indoor LED Video Wall Display including Controller, Processor & Mounting accessories of following specifications or equivalent: Pixel Pitch: Maximum 3.12mm Brightness: Minimum 8 nits Brightness Pixel Density: Minimum 1, pixels/m2 Visual Viewing Angle (Horizontal/Vertical) : 14/14 or above Power Supply (V) : 11-22 V AC, 5 Hz Operating Temperature: -1C to + 4C Frame Rate (Hz): 5/6 Refresh Rate (Hz): Minimum 288 IP Rating (Front / Rear) : front IP3 minimum/rear IP21 minimum CE certified					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Warranty : Minimum 1 year Installation with Controller, Processor & Mounting accessories & Warranty/Service Support	Per Sqft	19,295.00	19829	19825	19825
1.5.3.2	Supply, installation, testing and commissioning of Indoor LED Video Wall Display including Controller, Processor & Mounting accessories of following specifications or equivalent: Pixel Pitch: 1.25mm Brightness : 6 nits Brightness Visual Viewing Angle (Horizontal/Vertical) : 16/16 or above Pixel Density: 64, pixels/m2 or above Power Supply (V): 11-22 V AC, 5 Hz Operating Temperature : -1C to + 4C Frame Rate (Hz): 5/6 Refresh Rate (Hz): Minimum 384 Hz IP Rating (Front / Rear) : Front IP2 minimum/ Rear IP2 minimum CE certified Warranty : Minimum 1 year	Per Sqft	78,996.00	81186	81181	81181

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.5.3.3	Supply, installation, testing and commissioning of Indoor LED Video Wall Display including Controller, Processor & Mounting accessories of following specifications or equivalent: Pixel Pitch: 1.87mm Brightness: 6 nits Brightness Visual Viewing Angle (Horizontal/Vertical) : 16/16 or above Pixel Density: 284,444 pixels/m2 or above Power Supply (V): 11-22 V AC, 5 Hz Operating Temperature: -1C to + 4C Frame Rate (Hz): 5/6 Refresh Rate (Hz): Minimum 384 Hz IP Rating (Front / Rear) : Front IP4 minimum/ Rear IP21 minimum CE certified Warranty : Minimum 1 year Installation with Controller, Processor & Mounting accessories &	Per Sqft	56,637.00	5825	5822	5822
1.6	PROFESSIONAL DISPLAY SOLUTION (OUTDOOR)					
1.6.1	Category A					
1.6.1.1	Outdoor LED Video Wall Display					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installation, testing and commissioning of Outdoor LED Video Wall Display including Controller, Processor & Mounting accessories of following specifications or equivalent: Pixel Pitch: Maximum 3.91mm Brightness: Minimum 5 nit Pixel Density: Minimum 65,536 pixels/m² Visual Viewing Angle (Horizontal x Vertical) : 16 × 155 or higher Contrast Ratio : 6, or higher Power Supply (V) : 1 to 24 V AC 5 Hz Frame Rate (Hz): 5/6 Refresh Rate (Hz): Minimum 384 IP Rating (Front) : IP65X minimum IP Rating (Rear) : IP65X minimum Operating Temperature : -2C to +45C 9 Corner option, IP rated weatherproof Design Two cabinet options Certificates: ISO, FCC, CE, RoHS etc Warranty : Minimum 1 year product of South Korea, Japan, EU Countries or equivalent accepted/approved by the engineer-in-charge.	Per Sqft	96,015.00	98676	98673	98673
1.6.1.2 Outdoor LED Video Wall Display						

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installation, testing and commissioning of Outdoor LED Video Wall Display including Controller, Processor & Mounting accessories of following specifications or equivalent: Pixel Pitch: Maximum 4.63mm Brightness: Minimum 5 nit Pixel Density: Minimum 46,656 pixels/m ² Visual Viewing Angle (H x V) : 16 × 135 or higher Contrast Ratio: 11, or higher Power Supply (V) : 1 to 24 V AC 5Hz Frame Rate (Hz): 5/6 Refresh Rate (Hz): Minimum 384 IP Rating (Front): IP65X minimum IP Rating (Rear) : IP65X minimum Operating Temperature : -2C to +45C Certificates: FCC, CE, ETL etc 9 Corner option, IP rated weatherproof Design Two cabinet options Warranty : Minimum 1 year Brand: product of South Korea, Japan, EU Countries or equivalent	Per Sqft	79,618.00	81825	8183	8183
1.6.1.3	Outdoor LED Video Wall Display					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installation, testing and commissioning of Outdoor LED Video Wall Display including Controller, Processor & Mounting accessories of following specifications or equivalent: Pixel Pitch:Maximum 6.6mm Brightness:Minimum 5 nit Pixel Density:Minimum 22,5 pixels/m2 Visual Viewing Angle (H x V) : 16 × 12 or higher Contrast Ratio : 11, or higher Power Supply (V) : 1 to 24 V AC 5Hz Frame Rate (Hz): 5/6 Refresh Rate (Hz): Minimum 384 IP Rating (Front) : IP65X minimum IP Rating (Rear) : IP65X minimum Operating Temperature : -2C to +5C Certificates: FCC, CE, RoHS etc 9 Corner option, IP rated weatherproof Design Two cabinet options Warranty : Minimum 1 year Brand:product of South Korea, Japan, EU Countries or equivalent accepted/approved by the engineer-in-charge.	Per Sqft	77,288.00	7943	79427	79427
1.6	PROFESSIONAL DISPLAY SOLUTION (OUTDOOR)					
1.6.2	Category B					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.6.2.1	Supply, installation, testing and commissioning of Outdoor LED Video Wall Display including Controller, Processor & Mounting accessories of following specifications or equivalent: Pixel Pitch: Maximum 8mm Brightness: Minimum 55 nits Viewing Angle(Horizontal/Vertical): H14/V1 or above Pixel Density: Minimum 15,625 dot/m2 Front iP65/Rear iP54 Operating Temperature : -2 C to + 4 C Frame Rate : 5/6 Hz Refresh rate : 192 Hz CE certified Warranty : Minimum 1 year accepted/approved by the engineer-in-charge. Installation with Controller, Processor & Mounting accessories & Warranty/Service Support	Per Sqft	22,574.00	22572	22568	22568

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
1.6.2.2	Supply, installation, testing and commissioning of Outdoor LED Video Wall Display including Controller, Processor & Mounting accessories of following specifications or equivalent: Pixel Pitch :Maximum 6.67mm Brightness:Minimum 55 nits viewing Angle:Minimum H14/V1 Pixel Density:Minimum 15,625 dot/m2 Front iP65/Rear iP54 Operating Temperature : -2 C to + 4 C Frame Rate : 5/6 Hz Refresh Rate : 192 Hz CE certified Warranty : Minimum 1 year Accepted/approved by the engineer-in-charge. Installation with Controller, Processor & Mounting accessories & Warranty/Service Support	Per Sqft	26,988.00	26986	26982	26982
1.7	Floor Standing Display Supply, installation, testing and commissioning of Floor Standing Display including Controller, Processor & Mounting accessories of following specifications or equivalent:					
1.7.1	Floor Standing Display 43" Screen : Minimum 43" Commercial LCD Display Resolution: 192 x 18 or higher Display Area: Minimum 943.2 x 531.4 mm Viewing Angle : Minimum H178, V178 Brightness : 35cd/m2 or higher Contrast Ratio : Minimum 4:1 Response Time : Maximum 6ms Lifetime : ≥6 hours CPU : Quad-core ARM Cortex or higher RAM : Minimum 2GB ROM : Minimum 8 GB					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Built in OS : Android 5.1 or higher Control System : Software Based Central Control Control Software Features : Server based Central Content Management via Internet, Multiple-Screen Broadcasting, Multiple Screen Split option, Minimum 3 units of Kiosk should be controlled by single software, Scheduled Program Upload, Real-time Update Broadcast Program Type : Picture, Video, Text, Date, Time, Weather, Website, Document. (Must be ensured) USB Input : USB2. x minimum 2 I/O Interface: SD card slot x minimum 1, Power switch x minimum 1 Wi-Fi: Built in 802.11b/g/n RJ45 : Yes Speaker : Built in minimum 1W x2 ON/OFF Function : Remote control Video Color System: PAL/NTSC/SECAM Video Format : WMV, AVI, FLV, MPEG, MP4 etc. Audio Format : MP3, WMA, WAV, AAC, M4A etc. Image Format : BMP, JPEG, PNG, GIF etc. Image Resolution : 480P/720P/1080P or better Menu Language : English Orientation : Portrait Frame : Aluminium Profile Glass : Tempered glass Certificates : ISO91, CCC, CE, FCC, ROHS Warranty: Minimum 1 year	Each	138,847.00	138843	138839	138839
1.7.2	Floor Standing Display 55"					
	Screen: Minimum 55" Commercial LCD Display					
	Resolution: 1920 x 1080 or higher					
	Display Area: Minimum 121 x 682 mm					
	Viewing Angle : Minimum H178, V178					
	Brightness : 35cd/m2 or higher					
	Contrast Ratio : Minimum 4:1					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Response Time : Maximum 6ms Lifetime : ≥6 hours CPU : Quad-core ARM Cortex or higher RAM : Minimum 2GB ROM : Minimum 8 GB Built in OS : Android 5.1 or higher Control System : Software Based Central Control Control Software Features : Server based Central Content Management via Internet, Multiple-Screen Broadcasting, Multiple Screen Split option, Minimum 3 units of Kiosk should be controlled by single software, Scheduled Program Upload, Real-time Update Broadcast Program Type : Picture, Video, Text, Date, Time, Weather, Website, Document. (Must be ensured) USB Input : USB2. x minimum 2 I/O Interface: SD card slot x minimum 1, Power switch x minimum 1 Wi-Fi: Built in 802.11b/g/n ; RJ45 : Yes Speaker : Built in minimum 1W x2 ON/OFF Function : Remote control Video Color System: PAL/NTSC/SECAM Video Format : WMV, AVI, FLV, MPEG, MP4 etc. Audio Format : MP3, WMA, WAV, AAC, M4A etc. Image Format : BMP, JPEG, PNG, GIF etc. Image Resolution : 48P/72P/108P or better Menu Language : English Orientation : Portrait Frame : Aluminium Profile Glass : Tempered glass Certificates : ISO91, CCC, CE, FCC, ROHS Warranty: Minimum 1 year	Each	176,680.00	176676	176672	176672
1.7.3	Floor Standing Display 65" Screen: Minimum 65" Commercial LCD Display Resolution: 192 x 18 or higher Display Area : Minimum 1428.48 x 83.52 mm					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Viewing Angle : Minimum H178, V178 Brightness : 35cd/m2 or higher Contrast Ratio : Minimum 4:1 Response Time : Maximum 6ms Lifetime : ≥ 6 hours CPU : Quad-core ARM Cortex or higher RAM : Minimum 2GB ROM : Minimum 8 GB Built in OS : Android 5.1 or higher Control System : Software Based Central Control Control Software Features : Server based Central Content Management via Internet, Multiple-Screen Broadcasting, Multiple Screen Split option, Minimum 3 units of Kiosk should be controlled by single software, Scheduled Program Upload, Real-time Update Broadcast Program Type : Picture, Video, Text, Date, Time, Weather, Website, Document. (Must be ensured) USB Input : USB2. x minimum 2 I/O Interface: SD card slot x minimum 1, Power switch x minimum 1 Wi-Fi: Built in 802.11b/g/n RJ45 : Yes Speaker : Built in minimum 1W x2 ON/OFF Function : Remote control Video Color System: PAL/NTSC/SECAM Video Format : WMV, AVI, FLV, MPEG, MP4 etc. Audio Format : MP3, WMA, WAV, AAC, M4A etc. Image Format : BMP, JPEG, PNG, GIF etc. Image Resolution : 48P/72P/108P or better Menu Language : English Orientation : Portrait Frame : Aluminium Profile Glass : Tempered glass Certificates : ISO91, CCC, CE, FCC, ROHS Warranty: Minimum 1 year	Each	-	21458	21454	21454

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Subhead-11
Medical Gas & Vacuum Pipe Line System (MGVPS)

Item No.	Description of items	Unit	Unit rate	Unit rate	Unit rate	Unit rate
11.1	MEDICAL GAS OUTLETS Supply & installation of medical gas and vacuum outlets conform to the following standards: Terminal units shall be gas specific only to accept correct medical gas probe. For positive pressure gas services, the outlet should be equipped with a primary, and secondary check valve. The secondary check valve should be rated at a minimum of 1379 kPa if the primary check valve is removed for maintenance. Outlet bodies should be gas-specific by indexing each gas service to a gas-specific dual pin indexing arrangement on the respective identification module. Gas-specific components within a terminal unit shall be pin indexed to ensure that a correct gas-specific assemble is achieved. Each terminal unit shall incorporate a maintenance valve, designed to shut off the gas flow when the terminal unit is removed for maintenance purposes. The units shall be capable of single-handed insertion and removal/push type. A color-coded front plate should be used for ease of gas identification and aesthetic appeal. A one-piece fascia plate should frame the outlet. The units should be suitable for concealed installation and should be complete in all respect including chromed fascia. First fix assembly, second fix assembly, fascia plates, fixing screws, etc. distance between outlets must conform to a recommended minimum, and the facial plate shall be sized accordingly. All outlets shall be a 360-degree swivel inlet pipe for easy installation. All outlets shall be cleaned, degreased, and covered with anti-bacterial film for medical gas service and factory assembled and tested. Standard : HTM-02-01/ HTM-2022/NFPA 99/ DIN / JIS or equivalent Manufacturer must have valid ISO-9001, ISO-13485, 93/42/EEC (CE) certifications or UL listing or ELT certification and manufacturing experience of minimum 20 (twenty) years including predecessor company's experience (if any) .					

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11.1.1	Country of origin : USA / CANADA /UK / EU / JAPAN						
11.1.1.1	Outlets for Oxygen (345kpa-500 kpa)	Set	Tk.	7,092.00 Tk.	7,092.00 Tk.	7,092.00 Tk.	7,092.00
11.1.1.2	Outlets for Nitrous Oxide (345kpa-500 kpa)	Set	Tk.	7,092.00 Tk.	7,092.00 Tk.	7,092.00 Tk.	7,092.00
11.1.1.3	Outlets for Medical Air (345kpa-500 kpa)	Set	Tk.	7,092.00 Tk.	7,092.00 Tk.	7,092.00 Tk.	7,092.00
11.1.1.4	Outlets for Nitrogen / Surgical Air (700 kpa-800kpa).	Set	Tk.	7,092.00 Tk.	7,092.00 Tk.	7,092.00 Tk.	7,092.00
11.1.1.5	Outlets for Medical Vacuum	Set	Tk.	7,092.00 Tk.	7,092.00 Tk.	7,092.00 Tk.	7,092.00
11.1.1.6	Medical Vacuum slides	Set	Tk.	2,135.00 Tk.	2,135.00 Tk.	2,135.00 Tk.	2,135.00
11.1.2	Country of origin : TURKEY/ SOUTH KOREA/ MALAYSIA/ THAILAND/ VIETNAM						
11.1.2.1	Outlets for Oxygen (345kpa-500 kpa)	Set	Tk.	5,005.00 Tk.	5,005.00 Tk.	5,005.00 Tk.	5,005.00
11.1.2.2	Outlets for Nitrous Oxide (345kpa-500 kpa)	Set	Tk.	5,005.00 Tk.	5,005.00 Tk.	5,005.00 Tk.	5,005.00
11.1.2.3	Outlets for Medical Air (345kpa-500 kpa)	Set	Tk.	5,005.00 Tk.	5,005.00 Tk.	5,005.00 Tk.	5,005.00
11.1.2.4	Outlets for Nitrogen / Surgical Air (700 kpa-800kpa).	Set	Tk.	5,005.00 Tk.	5,005.00 Tk.	5,005.00 Tk.	5,005.00
11.1.2.5	Outlets for Medical Vacuum	Set	Tk.	5,005.00 Tk.	5,005.00 Tk.	5,005.00 Tk.	5,005.00
11.1.2.6	Medical Vacuum slides	Set	Tk.	1,535.00 Tk.	1,535.00 Tk.	1,535.00 Tk.	1,535.00

11.2 GAS LINE VALVES

Supply & installation of medical gas line ball valve shall be constructed of nickel-plated brass body, approved type seal, and a chrome-plated ball. The valves shall be operated by a manual operating level selected through 90 degrees and by a lever-type handle requiring only a quarter turn from a fully open position to a fully closed position. Ball valves shall be equipped with washed and degreased copper pipe stub extension at both the inlet and the outlet sides of the valve port to facilitate installation. Valves should be designed so that they can be swung out during installation to prevent damage due to heat transfer during the brazing operation. Each valve assembly shall be washed and degreased for medical gas service.

Pipe stub extension shall be capped at both ends. The valve shall be supplied in a sealed plastic bag to prevent contamination before installation.

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All ball valves shall provide a full bore flowing be properly cleaned and tested. The valves shall be complete with the necessary adapter, bonded seals, sockets, and other accessories.

Standard: HTM-02-01/ HTM-2022/NFPA 99/ DIN / JIS or equivalent

Country Of Manufacture: USA/ CANADA/UK/EU/JAPAN

The manufacturer must have valid ISO-9001, ISO-13485, and manufacturing experience of a minimum of 20 (twenty) years including the predecessor company's experience (if any).

11.2.1	15 mm dia	No.	Tk.	7,129.00 Tk.	7,129.00 Tk.	7,129.00 Tk.	7,129.00
11.2.2	22 mm dia	No.	Tk.	8,602.00 Tk.	8,602.00 Tk.	8,602.00 Tk.	8,602.00
11.2.3	28 mm dia	No.	Tk.	10,350.00 Tk.	10,350.00 Tk.	10,350.00 Tk.	10,350.00
11.2.4	35 mm dia	No.	Tk.	14,790.00 Tk.	14,790.00 Tk.	14,790.00 Tk.	14,790.00
11.2.5	42 mm dia	No.	Tk.	18,694.00 Tk.	18,694.00 Tk.	18,694.00 Tk.	18,694.00
11.2.6	54 mm dia	No.	Tk.	25,964.00 Tk.	25,964.00 Tk.	25,964.00 Tk.	25,964.00

11.3 COPPER PIPE WORKS

Supply & installation of degreased and non-arsenic medical graded copper pipe complete with all necessary pipe fittings such as bends, tees, reducers, sockets, etc. as per drawing and direction. The concealed pipes shall be covered with PVC pipe and shall be installed with proper hangers, supports, clamp as per site condition and complying standard. Pipework shall be of fluxless brazing with inert gas purging. Pipework shall be tested unto the recommendation and direction of the consultant and Engineer in charge.

Tubes shall be marked at repeated distances along their length of not greater than 600mm, with at least the following;

- Manufacturing standard mark (such as EN 13348 or equivalent),
- nominal cross-sectional dimensions: outside diameter x wall thickness
- identification for R250 (half-hard) temper by the following symbol: I-I-I;
- Manufacturer's identification mark,
- date of production.

Working Pressure Tolerance : Minimum 20 Bar

Tensile Strength : Minimum 250 N/mm -Sq

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Standard: Manufactured to BS EN 13348 or equivalent .
 Country Of Manufacture: USA/ CANADA/UK/EU/JAPAN
 The manufacturer must have valid ISO-9001, ISO-13485, and manufacturing experience of a minimum of 20 (twenty) years including the predecessor company's experience (if any).

11.3.1	12 mm dia. (Outer), thickness 0.6 mm -----	Meter	Tk.	547.00 Tk.	547.00 Tk.	547.00 Tk.	547.00
11.3.2	15 mm dia. (Outer), thickness 0.7 mm -----	Meter	Tk.	866.00 Tk.	866.00 Tk.	866.00 Tk.	866.00
11.3.3	22 mm dia. (Outer), thickness 0.9 mm -----	Meter	Tk.	1,075.00 Tk.	1,075.00 Tk.	1,075.00 Tk.	1,075.00
11.3.4	28 mm dia. (Outer), thickness 0.9 mm -----	Meter	Tk.	1,412.00 Tk.	1,412.00 Tk.	1,412.00 Tk.	1,412.00
11.3.5	35 mm dia. (Outer), thickness 1.2 mm -----	Meter	Tk.	2,701.00 Tk.	2,701.00 Tk.	2,701.00 Tk.	2,701.00
11.3.6	42 mm dia.. (Outer), thickness 1.2 mm -----	Meter	Tk.	3,308.00 Tk.	3,308.00 Tk.	3,308.00 Tk.	3,308.00
11.3.7	54 mm dia.. (Outer), thickness 1.2 mm -----	Meter	Tk.	4,781.00 Tk.	4,781.00 Tk.	4,781.00 Tk.	4,781.00

11.4 AREA VALVE SERVICE UNIT (AVSU) / ZONE SERVICE UNIT (ZSU)

Supply & installation of Area Valve Service Unit (AVSU) / Zone Service Unit (ZSU) shall confirm the following standard: The AVSU / ZSU shall be suitable for concealed/surface installation. The unit shall provide a zone isolation facility for use either in an emergency or for maintenance purposes. The AVSU / ZSU shall be fully gas-specific, permanently labeled to identify the medical gas service and incorporate gas-specific NIST connections to the international standard on each side of the line valve. Pressure gas service NIST connections shall include self-sealing valves, which are normally held closed by gas pressure.

Standard :HTM-02-01/ HTM-2022/NFPA 99/ DIN / JIS or equivalent

The manufacturer must have valid ISO-9001, ISO-13485, and manufacturing experience of a minimum of 20 (twenty) years, including the predecessor company's experience (if any).

11.4.1 Country of origin : USA / CANADA / UK / EU / JAPAN

11.4.1.1	AVSU / ZSU for Oxygen	No.	Tk.	31,115.00 Tk.	31,115.00 Tk.	31,115.00 Tk.	31,115.00
11.4.1.2	AVSU / ZSU for Nitrous Oxide	No.	Tk.	31,115.00 Tk.	31,115.00 Tk.	31,115.00 Tk.	31,115.00
11.4.1.3	AVSU / ZSU for Medical Air((345 kpa-500kpa.)	No.	Tk.	31,115.00 Tk.	31,115.00 Tk.	31,115.00 Tk.	31,115.00
11.4.1.4	AVSU / ZSU for Nitrogen / Surgical Air(700kpa-800kpa)	No.	Tk.	31,115.00 Tk.	31,115.00 Tk.	31,115.00 Tk.	31,115.00
11.4.1.5	AVSU / ZSU for vacuum	No.	Tk.	31,115.00 Tk.	31,115.00 Tk.	31,115.00 Tk.	31,115.00

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11.4.2	Country of origin : TURKEY/ SOUTH KOREA/ MALAYSIA/ THAILAND/ VIETNAM						
11.4.2.1	AVSU / ZSU for Oxygen	No.	Tk.	21,862.00 Tk.	21,862.00 Tk.	21,862.00 Tk.	21,862.00
11.4.2.2	AVSU / ZSU for Nitrous Oxide	No.	Tk.	21,862.00 Tk.	21,862.00 Tk.	21,862.00 Tk.	21,862.00
11.4.2.3	AVSU / ZSU for Medical Air((345 kpa-500kpa.)	No.	Tk.	21,862.00 Tk.	21,862.00 Tk.	21,862.00 Tk.	21,862.00
11.4.2.4	AVSU / ZSU for Nitrogen / Surgical Air(700kpa-800kpa)	No.	Tk.	21,862.00 Tk.	21,862.00 Tk.	21,862.00 Tk.	21,862.00
11.4.2.5	AVSU / ZSU for vacuum	No.	Tk.	21,862.00 Tk.	21,862.00 Tk.	21,862.00 Tk.	21,862.00
11.5	PENDANT FOR OT						
11.5.1	Rigid pendant						
	Supply & installation of Rigid Pendants will be ceiling-mounted service columns that can provide up to eight medical gas and vacuum services, 8 x Electrical sockets, 4 x Earthing nodes, & 1 x Monitor stand. The casing shall be a steel-powder coated unit with a stainless steel bottom plate. Terminal units are gas-specific. Special features: The second fix comprises a pendant shall hose and terminal unit. The ceiling column should be supplied with 2 x Oxygen, 2 x vacuum, 2 x Nitrous Oxide, 1 x Medical Air (345kpa-500kpa), 1 x Surgical Air/ Nitrogen (700kpa-800kpa), 2 x I.V Pole or any other combination of medical gases as per requirement. The length of the pendant would be as per customer requirements. Electrical socket supply available.						
	Standard: HTM-02-01/ HTM-2022/NFPA 99/ DIN / JIS or equivalent Manufacturer must have valid ISO-9001, ISO-13485, 93/42/EEC (CE) certifications or UL listing or ELT certification and manufacturing experience of a minimum of 20 (twenty) years, including the predecessor company's experience (if any).						
11.5.1.1	Manufactured in USA/ CANADA/UK /EU/JAPAN.	Set	Tk.	4,20,406.00 Tk.	4,20,406.00 Tk.	4,20,406.00 Tk.	4,20,406.00
11.5.1.2	Manufactured in TURKEY/ SOUTH KOREA/ MALAYSIA/ THAILAND/ VIETNAM.	Set	Tk.	2,95,499.00 Tk.	2,95,499.00 Tk.	2,95,499.00 Tk.	2,95,499.00
11.5.2	Flexible pendent						

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Supply & installation of Flexible Pendant. The Flexible Pendant shall comprise color-coded flexible hoses, with medical service terminal units suspended from gas-specific first-fix assemblies. Terminal units and first-fix assemblies will be protected by white decorative covers. The terminal units shall comply with the following standard. Color-coded hose assemblies shall be manufactured with non-interchangeable male and female terminations permanently attached. Hose lengths will be suited to specific site requirements. First-fix connectors shall be manufactured from machined brass with copper stub pipes for easy installation and incorporate check valves to allow the removal of hoses without disrupting the gas supply.

Standard: HTM-02-01/ HTM-2022/NFPA 99/ DIN / JIS or equivalent

Manufacturer must have valid ISO-9001, ISO-13485, 93/42/EEC (CE) certifications or UL listing or ELT certification and manufacturing experience of a minimum of 20 (twenty) years, including the predecessor company's experience (if any).

11.5.2.1 Country of origin : USA / CANADA / UK / EU / JAPAN

11.5.2.1.1	For 2 gas outlets -----	Set	Tk.	98,625.00 Tk.	98,625.00 Tk.	98,625.00 Tk.	98,625.00
11.5.2.1.2	For 3 gas outlets -----	Set	Tk.	1,06,356.00 Tk.	1,06,356.00 Tk.	1,06,356.00 Tk.	1,06,356.00
11.5.2.1.3	For 4 gas outlets -----	Set	Tk.	1,21,408.00 Tk.	1,21,408.00 Tk.	1,21,408.00 Tk.	1,21,408.00
11.5.2.1.4	For 5 gas outlets -----	Set	Tk.	1,36,471.00 Tk.	1,36,471.00 Tk.	1,36,471.00 Tk.	1,36,471.00

11.5.2.2 Country of origin : TURKEY/ SOUTH KOREA/ MALAYSIA/ THAILAND/ VIETNAM

11.5.2.2.1	For 2 gas outlets -----	Set	Tk.	70,252.00 Tk.	70,252.00 Tk.	70,252.00 Tk.	70,252.00
11.5.2.2.2	For 3 gas outlets -----	Set	Tk.	75,664.00 Tk.	75,664.00 Tk.	75,664.00 Tk.	75,664.00
11.5.2.2.3	For 4 gas outlets -----	Set	Tk.	86,200.00 Tk.	86,200.00 Tk.	86,200.00 Tk.	86,200.00
11.5.2.2.4	For 5 gas outlets -----	Set	Tk.	96,745.00 Tk.	96,745.00 Tk.	96,745.00 Tk.	96,745.00

11.6 BEDHEAD TRUNKING

11.6.1 BEDHEAD TRUNKING FOR ICU

Supply & installation of following Horizontal type bedhead trunking system used in ICU. The system consists of the following :

The main materials will be aluminum extrusion profile
2 x Oxygen outlet

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	2 x vacuum outlet						
	2 x compressed air (3.45 bar - 5 bar)						
	4 x electric socket (3 pin flat)						
	1 x provision for LAN						
	1 x light						
	1 x provision for LAN						
	4 x Earthing node						
	1 x equipment rail						
	1 X monitor tray						
	Standard: HTM-02-01/ HTM-2022/NFPA 99/ DIN / JIS or equivalent						
	Manufacturer must have valid ISO-9001, ISO-13485, 93/42/EEC (CE) certifications or UL listing or ELT certification and manufacturing experience of a minimum of 20 (twenty) years, including the predecessor company's experience (if any)						
11.6.1.1	Manufactured in USA/ CANADA/UK /EU/JAPAN.	Set	Tk.	2,81,301.00 Tk.	2,81,301.00 Tk.	2,81,301.00 Tk.	2,81,301.00
11.6.1.2	Manufactured in TURKEY/ SOUTH KOREA/ MALAYSIA/ THAILAND/ VIETNAM.	Set	Tk.	1,97,923.00 Tk.	1,97,923.00 Tk.	1,97,923.00 Tk.	1,97,923.00
11.6.2	BEDHEAD TRUNKING FOR CABIN						
	Supply & installation of following Horizontal type bed head trunking system used in cabin/ward. The system consists of the following :						
	The main materials will be aluminum extrusion profile						
	1 x Oxygen outlet						
	1 x vacuum Outlet						
	1 x compressed air (3.45 bar - 5 bar)						
	2 x electric socket (3 pin flat)						
	4 x 2 Pin electric socket						
	1 x direct LED Light						
	1 x indirect LED Light						
	1 x provision for nurse call system						
	1 x provision for telephone						
	1 x provision for LAN						
	1 x equipment rail						
	Standard:HTM-02-01/ HTM-2022/NFPA 99/ DIN / JIS or equivalent						
	Country Of Manufacture: USA/ CANADA/UK/EU/JAPAN						

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	Manufacturer must have valid ISO-9001, ISO-13485, 93/42/EEC (CE) certifications or UL listing or ELT certification and manufacturing experience of a minimum of 20 (twenty) years, including the predecessor company's experience (if any)						
11.6.2.1	Manufactured in USA/ CANADA/UK /EU/JAPAN.	Set	Tk.	1,57,062.00 Tk.	1,57,062.00 Tk.	1,57,062.00 Tk.	1,57,062.00
11.6.2.2	Manufactured in TURKEY/ SOUTH KOREA/ MALAYSIA/ THAILAND/ VIETNAM.	Set	Tk.	1,10,753.00 Tk.	1,10,753.00 Tk.	1,10,753.00 Tk.	1,10,753.00

11.7 MANIFOLD CONTROL SYSTEM

Supply & installation of manifold control system (MCS) shall supply medical gas from both left and right-hand manifold banks. The operation and performance criteria shall fully satisfy the requirements of the following standard. The MCS shall operate at a maximum inlet pressure of 20,000 kPa and provide a distribution system pressure of 345 kPa-800 kPa. Either the left or right-hand manifold bank may be designated "duty" or the MCS shall manual type change over to supply the distribution system from the "stand by" bank when the pressure in the duty bank falls to 800-2000 kPa. High-pressure gauges/digital display shall indicate gas contents in the respective manifold cylinder bank, and a supply pressure gauge/digital display shall indicate -distribution pressure. The supply system shall be protected by a 25-micron filter with replaceable elements, and a pair of matching pressure relief valves shall be provided.

High and low line pressure switches shall sense distribution system pressure and operate local and remote alarm indications. Local indications shall be utilized colored long life high-intensity LEDs on the control panel to indicate the bank used for high and low-pressure supply conditions. Selector switches shall provide a manual change over and operate test circuits to prove LED integrity. A volt-free terminal shall be provided for connection to a remote alarm system. Design of manifold control system shall replace any component in the control and monitoring system in possible uninterrupted supply. It should be Halogen polymers free & adiabatic test passed.

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Control Panel flow capacity will be minimum 2500 ltr/min at 4 to 7 bar

Standard: HTM-02-01/ HTM-2022/NFPA 99/ DIN / JIS or equivalent .

Manufacturer must have valid ISO-9001, ISO-13485, 93/42/EEC (CE) certifications or UL listing or ELT certification and manufacturing experience of a minimum of 20 (twenty) years, including the predecessor company's experience (if any)

11.7.1 Country of origin : USA / CANADA /UK / EU / JAPAN

11.7.1.1	Automatic manifold control system with 2x4 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.	Set	Tk.	6,40,826.00 Tk.	6,58,256 Tk.	6,56,969 Tk.	6,56,969
11.7.1.2	Automatic manifold control system with 2x6 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.	Set	Tk.	7,18,007.00 Tk.	7,37,577 Tk.	7,36,291 Tk.	7,36,291
11.7.1.3	Automatic manifold control system with 2x8 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.	Set	Tk.	7,95,189.00 Tk.	8,16,898 Tk.	8,15,613 Tk.	8,15,613
11.7.1.4	Automatic manifold control system with 2x10 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.	Set	Tk.	8,38,626.00 Tk.	8,61,541 Tk.	8,60,254 Tk.	8,60,254
11.7.1.5	Automatic manifold control system with 2x12 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.	Set	Tk.	8,87,708.00 Tk.	9,11,984 Tk.	9,10,697 Tk.	9,10,697
11.7.1.6	Manual manifold control system with 2x1 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.	Set	Tk.	1,70,008.00 Tk.	1,74,495 Tk.	1,73,637 Tk.	1,73,637
11.7.1.7	Manual manifold control system with 2x2 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.	Set	Tk.	2,00,929.00 Tk.	2,06,274 Tk.	2,05,417 Tk.	2,05,417
11.7.1.8	Manual manifold control system with 2x3 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.	Set	Tk.	2,31,851.00 Tk.	2,38,053 Tk.	2,37,196 Tk.	2,37,196
11.7.1.9	Manual manifold control system with 2x4 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen. (emergency)	Set	Tk.	2,62,650.00 Tk.	2,69,706 Tk.	2,68,848 Tk.	2,68,848

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11.7.1.10	Manual manifold control system with 2x6 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.(emergency)	Set	Tk.	3,24,493.00 Tk.	3,33,264 Tk.	3,32,407 Tk.	3,32,407
11.7.2	Country of origin : TURKEY/ SOUTH KOREA/ MALAYSIA/ THAILAND/ VIETNAM						
11.7.2.1	Automatic manifold control system with 2x4 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.	Set	Tk.	4,55,517.00 Tk.	4,67,808 Tk.	4,66,522 Tk.	4,66,522
11.7.2.2	Automatic manifold control system with 2x6 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.	Set	Tk.	5,09,544.00 Tk.	5,23,333 Tk.	5,22,047 Tk.	5,22,047
11.7.2.3	Automatic manifold control system with 2x8 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.	Set	Tk.	5,63,571.00 Tk.	5,78,859 Tk.	5,77,572 Tk.	5,77,572
11.7.2.4	Automatic manifold control system with 2x10 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.	Set	Tk.	5,93,977.00 Tk.	6,10,108 Tk.	6,08,821 Tk.	6,08,821
11.7.2.5	Automatic manifold control system with 2x12 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.	Set	Tk.	6,28,335.00 Tk.	6,45,418 Tk.	6,44,132 Tk.	6,44,132
11.7.2.6	Manual manifold control system with 2x1 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.	Set	Tk.	1,23,699.00 Tk.	1,26,902 Tk.	1,26,044 Tk.	1,26,044
11.7.2.7	Manual manifold control system with 2x2 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.	Set	Tk.	1,45,344.00 Tk.	1,49,147 Tk.	1,48,290 Tk.	1,48,290
11.7.2.8	Manual manifold control system with 2x3 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.	Set	Tk.	1,66,989.00 Tk.	1,71,392 Tk.	1,70,535 Tk.	1,70,535
11.7.2.9	Manual manifold control system with 2x4 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen. (emergency)	Set	Tk.	1,88,548.00 Tk.	1,93,549 Tk.	1,92,692 Tk.	1,92,692
11.7.2.10	Manual manifold control system with 2x6 cylinder ramp for Oxygen / Nitrous Oxide / Medical Air / Surgical Air or Nitrogen.(emergency)	Set	Tk.	2,31,839.00 Tk.	2,38,041 Tk.	2,37,183 Tk.	2,37,183
11.8	GAS ALARM						
11.8.1	MASTER ALARM						

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Supplying and installing of Master medical gas alarm that shall be capable of monitoring the following services utilizing pressure switches that sense deviations from the normal operating limit of either pressure or vacuum. Each gas service shall be displayed by colored LED's/ LCD to show normal, change the cylinder, change immediate, pressure fault, plant emergency, plant fault condition, or low and high-pressure conditions only.

Each module should be microprocessor-based and field adjustable. A maintenance mode should, when enabled, latch the alarms, requiring a reset after the alarm condition has been rectified. This is to assist in tracking down wiring problems or faulty field devices. The master alarm shall identify the last alarm condition by flashing, while the already acknowledged alarm shows a continuous red signal. The system shall have an audible warning which shall operate simultaneously with any failure indication, and a mute facility shall be provided. When enabled, a repeat alarm function shall be capable of turning on the buzzer again, after a preset time, if the fault condition has not been rectified.

Master alarms should be modular in construction and shall be capable of adding extra modules in the field. A "RED" alarm LED light shall illuminate if an alarm occurs, and the audible alarm shall sound. Pushing the "ALARM MUTE" button should silence the audible alarm, but the unit will remain in alarm condition until the problem is rectified. Identify the last alarm condition by flashing, while the already acknowledged alarm shows a continuous red signal.

The Alarm system should be a closed circuit self-monitoring type. A green "POWER" light should indicate that the unit energizes. In addition "TEST" and "ALARM MUTE" buttons should be easily accessible to operate and test the unit. The gas failure alarm system shall be installed at the location shown in the drawing with necessary service failure sensors compatible with the gas alarm system and sensor cable and shall be complete with all necessary accessories.

Standard : HTM-02-01/ HTM-2022/NFPA 99/ DIN / JIS or equivalent



Manufacturer must have valid ISO-9001, ISO-13485, 93/42/EEC (CE) certifications or UL listing or ELT certification and manufacturing experience of a minimum of 20 (twenty) years including predecessor company's experience (if any).

11.8.1.1	Master Alarm for 5 Services (4 gas +1 vacuum) manufactured in USA/ CANADA/UK /EU/JAPAN.	No.	Tk.	2,30,384.00 Tk.	2,36,546 Tk.	2,35,688 Tk.	2,35,688
11.8.1.2	Master Alarm for 5 Services (4 gas +1 vacuum) manufactured in TURKEY/ SOUTH KOREA/ MALAYSIA/ THAILAND/ VIETNAM.	No.	Tk.	1,65,963.00 Tk.	1,70,338 Tk.	1,69,480 Tk.	1,69,480
11.8.2	AREA ALARM Supplying and installing area alarm, which shall be microprocessor-based with individual microprocessors on each display and sensor board. The sensors should be capable of local (in box) or remote mounting. Each sensor and display unit shall be gas specific, displaying an error message for an incorrect connection.						

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The area alarms shall be of modular construction and field expandable with the addition of extra modules. Up to six services (LED) / eight services (LCD) can be accommodated as per the standard box. The alarm system shall have an audible warning which shall operate simultaneously with any failure indication and a mute facility shall be provided. Each specific service shall be provided with an LED digital / LCD read-out comprising of 0-250 psi [0-1724 kPa] for pressure and 0-30"Hg [-100-0 kPa] for vacuum. The digital read-out should provide a constant indication of each service being measured. Each gas service shall be displayed by colored LEDs, to show normal, low, and high-pressure conditions only. Failure indicators shall be displayed by flashing light and the normal indications shall be steady. A bar graph trend indicator shall be provided for each service indicating a green "NORMAL", yellow "CAUTION" and a red "HIGH" or "LOW" alarm condition. Under normal operation, the bar graph display should move up and down in the "GREEN" range depending on service usage. If an alarm occurs, the "RED" alarm light shall flash and the audible alarm shall sound. Pushing the "ALARM MUTE" button shall cancel the audible alarm, but the unit shall remain in the alarm condition until the problem is rectified. In addition, the "TEST" & "ALARM MUTE" buttons shall be easily accessible to operate and test the unit.

The system shall satisfy the following standard. The gas failure alarm system shall be installed at the location shown in the drawing with necessary service failure sensors compatible with the gas alarm system, sensor cable and shall be complete with all necessary accessories.

Standard: HTM-02-01/ HTM-2022/NFPA 99/ DIN / JIS or equivalent

Manufacturer must have valid ISO-9001, ISO-13485, 93/42/EEC (CE) certifications or UL listing or ELT certification and manufacturing experience of a minimum of 20 (twenty) years including predecessor company's experience (if any).

11.8.2.1 Country of origin : USA / CANADA / UK / EU / JAPAN

11.8.2.1.1	Area alarm for 2 services (1 gas + 1 vacuum)	No.	Tk.	1,17,951.00 Tk.	1,20,995 Tk.	1,20,138 Tk.	1,20,138
11.8.2.1.2	Area alarm for 3 services (2 gas + 1 vacuum)	No.	Tk.	1,55,543.00 Tk.	1,59,629 Tk.	1,58,772 Tk.	1,58,772

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11.8.2.1.3	Area alarm for 4 services (3 gas + 1 vacuum)	No.	Tk.	1,93,146.00 Tk.	1,98,275 Tk.	1,97,418 Tk.	1,97,418
11.8.2.1.4	Area alarm for 5 services (4 gas + 1 vacuum)	No.	Tk.	2,11,973.00 Tk.	2,17,624 Tk.	2,16,766 Tk.	2,16,766
11.8.2.2	Country of origin : TURKEY/ SOUTH KOREA/ MALAYSIA/ THAILAND/ VIETNAM						
11.8.2.2.1	Area alarm for 2 services (1 gas + 1 vacuum)	No.	Tk.	87,259.00 Tk.	89,452 Tk.	88,594 Tk.	88,594
11.8.2.2.2	Area alarm for 3 services (2 gas + 1 vacuum)	No.	Tk.	1,13,574.00 Tk.	1,16,496 Tk.	1,15,638 Tk.	1,15,638
11.8.2.2.3	Area alarm for 4 services (3 gas + 1 vacuum)	No.	Tk.	1,39,896.00 Tk.	1,43,548 Tk.	1,42,690 Tk.	1,42,690
11.8.2.2.4	Area alarm for 5 services (4 gas + 1 vacuum)	No.	Tk.	1,53,074.00 Tk.	1,57,092 Tk.	1,56,234 Tk.	1,56,234
11.8.3	COMBO UNIT Supply & installation of Each AVCU (Alarm Valve Combo Unit) shall consist of the following components: An 18 gauge steel valve box complete with a baked white enamel finish which can house one to six shut-off ball valves with tube extensions, gas specific sensor (DISS nut and nipple connection), extra port for optional pressure gauge, and a hinged gas specific compact alarm with illuminated LED digital display, with an error message for an incorrect connection, an aluminum frame, and a pull-out removable opaque window Affixed to the opposing sides of the box will be two adjustable steel brackets to mount the box to the structural support. The steel brackets shall accommodate various finished wall thicknesses between 3/8" [9.5mm] and 1-3/16" [30mm] and shall be field adjustable. The frame assembly shall be constructed of anodized aluminum and mounted to the backbox assembly by standard number 6-3/8" tapping screws as provided.						

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The digital alarm shall read from 0-250 psi [0-1724kPa] for pressure and 0-30"Hg [-100-0 Hg kPa] for vacuum. The digital read-out shall provide a constant indication of each service being measured. It will indicate a green "NORMAL" and a red "HIGH" or "LOW" alarm condition. If an alarm occurs, the "RED" alarm light shall flash, and the audible alarm (exceeds 90 decibels) will sound. Pushing the "ALARM MUTE" button will cancel the audible alarm, but the unit will remain in the alarm condition until the problem is rectified. When enabled on the compact alarm module, a repeat alarm function shall be capable of turning on the buzzer again (after a preset time) if the fault condition has not been rectified.

Access to the shut-off valves shall be by merely pulling the ring assembly to remove the window from the frame. The window can be reinstalled without the use of tools only after the valve handles have been returned to the open position. The window shall be marked to prohibit unauthorized persons from tampering with the valves with the following silk-screen caution:

"Medical Gas Control Valves with Alarms"

"Close Valves only in emergency"

The valves shall be a three-piece ball-type design with a bronze body and chrome-plated brass ball for sizes $\frac{1}{2}$ " to $1\frac{1}{2}$ ". Seats shall be Teflon (TFE) and seals Viton for $\frac{1}{2}$ " to $1\frac{1}{2}$ ". A blow-out-proof stem shall be used and the valves shall have a maximum pressure rating of 600 psi [4137 kPa]. Valves shall be operated by a lever-type handle requiring only a quarter turn from a fully open position to a fully closed position. All valves shall be equipped with washed and degreased copper pipe stub extensions to protrude 6" beyond the sides of the box. Each valve will be identified for gas specification as indicated on the hinged alarm label. In addition, each copper pipe shall be provided with stickers for identification.

All AVCU shall be cleaned and degreased for medical gas service, factory assembled, and tested. The system shall satisfy the following standard.

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The combo unit system shall be installed at the location shown in the drawing with service failure sensors compatible with the gas alarm system, sensor cable and shall be completed with all necessary accessories.

Standard: HTM-02-01/ HTM-2022/NFPA 99/ DIN / JIS or equivalent

Manufacturer must have valid ISO-9001, ISO-13485, 93/42/EEC (CE) certifications or UL listing or ELT certification and manufacturing experience of a minimum of 20 (twenty) years including predecessor company's experience (if any).

11.8.3.1 Country of origin : USA / CANADA / UK / EU / JAPAN

11.8.3.1.1	2 services (1 gas + 1 vacuum) alarm valve combo unit	No.	Tk.	1,59,916.00 Tk.	1,59,686 Tk.	1,58,828 Tk.	1,58,828
11.8.3.1.2	3 services (2 gas + 1 vacuum) alarm valve combo unit	No.	Tk.	1,98,551.00 Tk.	1,98,320 Tk.	1,97,463 Tk.	1,97,463
11.8.3.1.3	4 services (3 gas + 1 vacuum) alarm valve combo unit	No.	Tk.	2,17,846.00 Tk.	2,17,615 Tk.	2,16,758 Tk.	2,16,758
11.8.3.1.4	5 services (4 gas + 1 vacuum) alarm valve combo unit	No.	Tk.	2,37,197.00 Tk.	2,36,966 Tk.	2,36,109 Tk.	2,36,109

11.8.3.2 Country of origin : TURKEY/ SOUTH KOREA/ MALAYSIA/ THAILAND/ VIETNAM

11.8.3.2.1	2 services (1 gas + 1 vacuum) alarm valve combo unit	No.	Tk.	1,16,765.00 Tk.	1,16,535 Tk.	1,15,678 Tk.	1,15,678
11.8.3.2.2	3 services (2 gas + 1 vacuum) alarm valve combo unit	No.	Tk.	1,43,809.00 Tk.	1,43,580 Tk.	1,42,722 Tk.	1,42,722
11.8.3.2.3	4 services (3 gas + 1 vacuum) alarm valve combo unit	No.	Tk.	1,57,316.00 Tk.	1,57,085 Tk.	1,56,228 Tk.	1,56,228
11.8.3.2.4	5 services (4 gas + 1 vacuum) alarm valve combo unit	No.	Tk.	1,70,862.00 Tk.	1,70,632 Tk.	1,69,774 Tk.	1,69,774

11.9 VACUUM PLANT

11.9.1 Supply & installation of **duplex** vacuum plant that shall be in package configuration and shall incorporate the following features:
All major plant components with the exception of the receiver tank shall be duplex to conform to the requirements of the following standard:
(i) Vacuum pump and associated pipework to incorporate non-return valves.

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(ii) The duty vacuum pump to be rated at 75% of the design flow rate, the stand by vacuum pump to automatically operate during periods of peak demand or in the event of duty pump failure. The Medical Vacuum pumps should be continuous duty rotary vane air-cooled type equipped with non-asbestos vanes, having a minimum life of 30,000 to 50,000 hours. The pumps are to be provided with fully recirculated oil supply. The oil separation should be integral and consists of four stages of internally installed oil and smoke eliminators. This system should be capable of removing 99.9+% of oil and smoke particles from the exhaust.

Also included as standard equipment for each vacuum pump are: inlet check valve, inlet isolation valve, built in anti-suck-back valve, inlet filter screen, sight gauge to indicate oil level, pump drain valve, high exhaust pressure gauge, vacuum control switch, bronze or stainless steel flexible connectors on inlet and discharge lines as well as copper tubing with shut-off cock for gauge and vacuum switches.

(iii) The vacuum pump shall be designated to enable isolation of anyone component for maintenance purposes without interrupting the system operation. This includes pumps, filters, and receivers. The vacuum pump shall be of proven reliability, and the pump shall be driven by electric motors insulated **class F**. The receiver vessel shall be constructed and tested as per the following standards. The control panel and electrical installation shall conform to IEEE regulations. The starters to bacterial filter elements shall have a penetration level not exceeding 0.05% when tested by a sodium flame. Drainage trap bowels fitted to both the exhaust drain legs and bacterial filter bowels shall be suitable for sterilizations.

Standard: HTM-2022/NFPA 99/ DIN / JIS or equivalent

Manufacturer must have valid ISO-9001, ISO-13485, 93/42/EEC (CE) certifications or UL listing or ELT certification and manufacturing experience of a minimum of 20 (twenty) years including predecessor company's experience (if any).

11.9.1.1 Country of origin : USA / CANADA /UK / EU / JAPAN

11.9.1.1.1 Vacuum plant capacity minimum 425 LPM at 400 mm Hg.

Set	Tk.	19,42,090.00 Tk.	19,41,429 Tk.	19,39,071 Tk.	19,39,071

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11.9.1.1.2	Vacuum plant capacity minimum 625 LPM at 400 mm Hg .	Set	Tk.	26,18,261.00 Tk.	26,17,587 Tk.	26,15,229 Tk.	26,15,229
11.9.1.1.3	Vacuum plant capacity minimum 900 LPM at 400 mm Hg.	Set	Tk.	31,02,621.00 Tk.	31,01,854 Tk.	30,99,174 Tk.	30,99,174
11.9.1.1.4	Vacuum plant capacity minimum 1100 LPM at 400 mm Hg.	Set	Tk.	32,97,153.00 Tk.	32,96,296 Tk.	32,93,295 Tk.	32,93,295
11.9.1.1.5	Vacuum plant capacity minimum 1500 LPM at 400 mm Hg.	Set	Tk.	36,83,538.00 Tk.	36,82,673 Tk.	36,79,672 Tk.	36,79,672
11.9.1.1.6	Vacuum plant capacity minimum 1800 LPM at 400 mm Hg.	Set	Tk.	40,70,865.00 Tk.	40,69,936 Tk.	40,66,720 Tk.	40,66,720
11.9.1.1.7	Vacuum plant capacity minimum 2500 LPM at 400 mm Hg.	Set	Tk.	47,47,035.00 Tk.	47,46,093 Tk.	47,42,877 Tk.	47,42,877
11.9.1.1.8	Vacuum plant capacity minimum 2750 LPM at 400 mm Hg.	Set	Tk.	57,10,774.00 Tk.	57,09,814 Tk.	57,06,598 Tk.	57,06,598
11.9.1.1.9	Vacuum plant capacity minimum 3350 LPM at 400 mm Hg.	Set	Tk.	67,59,755.00 Tk.	67,58,697 Tk.	67,55,181 Tk.	67,55,181
11.9.1.1.10	Vacuum plant capacity minimum 4900 LPM at 400 mm Hg.	Set	Tk.	93,12,849.00 Tk.	93,11,741 Tk.	93,08,226 Tk.	93,08,226
11.9.1.2	Country of origin : TURKEY/ SOUTH KOREA/ MALAYSIA/ THAILAND/ VIETNAM						
11.9.1.2.1	Vacuum plant capacity minimum 425 LPM at 400 mm Hg.	Set	Tk.	13,71,740.00 Tk.	13,71,089 Tk.	13,68,731 Tk.	13,68,731
11.9.1.2.2	Vacuum plant capacity minimum 625 LPM at 400 mm Hg .	Set	Tk.	18,45,059.00 Tk.	18,44,400 Tk.	18,42,042 Tk.	18,42,042
11.9.1.2.3	Vacuum plant capacity minimum 900 LPM at 400 mm Hg.	Set	Tk.	21,85,738.00 Tk.	21,84,988 Tk.	21,82,309 Tk.	21,82,309
11.9.1.2.4	Vacuum plant capacity minimum 1100 LPM at 400 mm Hg.	Set	Tk.	23,23,537.00 Tk.	23,22,699 Tk.	23,19,698 Tk.	23,19,698
11.9.1.2.5	Vacuum plant capacity minimum 1500 LPM at 400 mm Hg.	Set	Tk.	25,94,006.00 Tk.	25,93,163 Tk.	25,90,161 Tk.	25,90,161
11.9.1.2.6	Vacuum plant capacity minimum 1800 LPM at 400 mm Hg.	Set	Tk.	28,66,290.00 Tk.	28,65,384 Tk.	28,62,168 Tk.	28,62,168
11.9.1.2.7	Vacuum plant capacity minimum 2500 LPM at 400 mm Hg.	Set	Tk.	33,39,610.00 Tk.	33,38,695 Tk.	33,35,479 Tk.	33,35,479
11.9.1.2.8	Vacuum plant capacity minimum 2750 LPM at 400 mm Hg.	Set	Tk.	40,14,452.00 Tk.	40,13,525 Tk.	40,10,309 Tk.	40,10,309
11.9.1.2.9	Vacuum plant capacity minimum 3350 LPM at 400 mm Hg.	Set	Tk.	47,50,177.00 Tk.	47,49,157 Tk.	47,45,641 Tk.	47,45,641
11.9.1.2.10	Vacuum plant capacity minimum 4900 LPM at 400 mm Hg.	Set	Tk.	65,37,532.00 Tk.	65,36,477 Tk.	65,32,961 Tk.	65,32,961
11.9.2	Supply & installation of minimum triplex (in accordance with relevant standard) vacuum plant that shall be in package configuration and shall incorporate the following features: All major plant components with the exception of the receiver tank shall be minimum triplex to conform to the requirements of the following standard: (i) Vacuum pump and associated pipework to incorporate non-return valves.						

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(ii) The duty vacuum pump will be rated at 75% of the design flow rate. The stand-by vacuum pump will automatically operate during periods of peak demand or in the event of duty pump failure. The Medical Vacuum pumps should be continuous-duty rotary vane air-cooled type equipped with non-asbestos vanes, having a minimum life of 30,000 to 50,000 hours. The pumps are to be provided with a fully recirculated oil supply. The oil separation should be integral and consists of four stages of internally installed oil and smoke eliminators. This system should be capable of removing 99.9+% of oil and smoke particles from the exhaust.

Also included as standard equipment for each vacuum pump are: inlet check valve, inlet isolation valve, built-in anti-suck-back valve, inlet filter screen, sight gauge to indicate oil level, pump drain valve, high exhaust pressure gauge, vacuum control switch, bronze or stainless steel flexible connectors on inlet and discharge lines as well as copper tubing with shut-off cock for gauge and vacuum switches.

(iii) The vacuum pump shall be designated to enable isolation of anyone component for maintenance purposes without interrupting the system operation. This includes pumps, filters, and receivers. The vacuum pump shall be of proven reliability, and the pump shall be driven by electric motors insulated **class F**. The receiver vessel shall be constructed and tested by the following standards. The control panel and electrical installation shall conform to IEEE regulations. The starters to bacterial filter elements shall have a penetration level not exceeding 0.05% when tested by a sodium flame. Drainage trap bowels fitted to both the exhaust drain legs and bacterial filter bowels shall be suitable for sterilizations.

Standard:HTM-02-01/ NFPA 99/ DIN / JIS or equivalent

Manufacturer must have valid ISO-9001, ISO-13485, 93/42/EEC (CE) certifications or UL listing or ELT certification and manufacturing experience of a minimum of 20 (twenty) years including predecessor company's experience (if any).

11.9.2.1 Country of origin : USA / CANADA /UK / EU / JAPAN

11.9.2.1.1 Vacuum plant capacity minimum 425 LPM at 400 mm Hg.

Set	Tk.	29,90,640.00 Tk.	29,89,902 Tk.	29,87,330 Tk.	29,87,330

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11.9.2.1.2	Vacuum plant capacity minimum 625 LPM at 400 mm Hg .	Set	Tk.	40,35,873.00 Tk.	40,35,116 Tk.	40,32,543 Tk.	40,32,543
11.9.2.1.3	Vacuum plant capacity minimum 900 LPM at 400 mm Hg.	Set	Tk.	46,25,313.00 Tk.	46,24,454 Tk.	46,21,538 Tk.	46,21,538
11.9.2.1.4	Vacuum plant capacity minimum 1100 LPM at 400 mm Hg.	Set	Tk.	49,03,802.00 Tk.	49,02,823 Tk.	48,99,479 Tk.	48,99,479
11.9.2.1.5	Vacuum plant capacity minimum 1500 LPM at 400 mm Hg.	Set	Tk.	54,48,041.00 Tk.	54,47,030 Tk.	54,43,600 Tk.	54,43,600
11.9.2.1.6	Vacuum plant capacity minimum 1800 LPM at 400 mm Hg.	Set	Tk.	57,22,746.00 Tk.	57,21,684 Tk.	57,18,083 Tk.	57,18,083
11.9.2.1.7	Vacuum plant capacity minimum 2500 LPM at 400 mm Hg.	Set	Tk.	66,72,959.00 Tk.	66,71,879 Tk.	66,68,277 Tk.	66,68,277
11.9.2.1.8	Vacuum plant capacity minimum 2750 LPM at 400 mm Hg.	Set	Tk.	74,12,770.00 Tk.	74,11,675 Tk.	74,08,074 Tk.	74,08,074
11.9.2.1.9	Vacuum plant capacity minimum 3350 LPM at 400 mm Hg.	Set	Tk.	87,71,856.00 Tk.	87,70,713 Tk.	87,67,026 Tk.	87,67,026
11.9.2.1.10	Vacuum plant capacity minimum 4900 LPM at 400 mm Hg.	Set	Tk.	1,16,28,135.00 Tk.	1,16,26,939 Tk.	1,16,23,251 Tk.	1,16,23,251
11.9.2.2	Country of origin : TURKEY/ SOUTH KOREA/ MALAYSIA/ THAILAND/ VIETNAM						
11.9.2.2.1	Vacuum plant capacity minimum 425 LPM at 400 mm Hg.	Set	Tk.	21,06,670.00 Tk.	21,05,949 Tk.	21,03,377 Tk.	21,03,377
11.9.2.2.2	Vacuum plant capacity minimum 625 LPM at 400 mm Hg .	Set	Tk.	28,38,334.00 Tk.	28,37,600 Tk.	28,35,027 Tk.	28,35,027
11.9.2.2.3	Vacuum plant capacity minimum 900 LPM at 400 mm Hg.	Set	Tk.	32,52,663.00 Tk.	32,51,829 Tk.	32,48,914 Tk.	32,48,914
11.9.2.2.4	Vacuum plant capacity minimum 1100 LPM at 400 mm Hg.	Set	Tk.	34,49,705.00 Tk.	34,48,754 Tk.	34,45,409 Tk.	34,45,409
11.9.2.2.5	Vacuum plant capacity minimum 1500 LPM at 400 mm Hg.	Set	Tk.	38,31,051.00 Tk.	38,30,070 Tk.	38,26,640 Tk.	38,26,640
11.9.2.2.6	Vacuum plant capacity minimum 1800 LPM at 400 mm Hg.	Set	Tk.	40,24,309.00 Tk.	40,23,279 Tk.	40,19,678 Tk.	40,19,678
11.9.2.2.7	Vacuum plant capacity minimum 2500 LPM at 400 mm Hg.	Set	Tk.	46,89,458.00 Tk.	46,88,416 Tk.	46,84,814 Tk.	46,84,814
11.9.2.2.8	Vacuum plant capacity minimum 2750 LPM at 400 mm Hg.	Set	Tk.	52,07,552.00 Tk.	52,06,500 Tk.	52,02,899 Tk.	52,02,899
11.9.2.2.9	Vacuum plant capacity minimum 3350 LPM at 400 mm Hg.	Set	Tk.	61,59,404.00 Tk.	61,58,311 Tk.	61,54,624 Tk.	61,54,624
11.9.2.2.10	Vacuum plant capacity minimum 4900 LPM at 400 mm Hg.	Set	Tk.	81,58,989.00 Tk.	81,57,859 Tk.	81,54,171 Tk.	81,54,171
11.10	DOWN STREAM EQUIPMENT						
11.10.1	Oxygen flow meter						
	Supply & installation of direct probe Oxygen flow meter complete with a high precision metering valve, high impact polycarbonate flow tubes, black glass float, and reusable steam autoclavable bubble humidifier, face mask, nipple tubing, etc. and flow rate shall be 0 to 15 liter/min and inlet pressure 4 bar $\pm$ 10%.						
	Manufacturer must have valid ISO-9001, ISO-13485, 93/42/EEC (CE) certifications or UL listing or ELT certification and manufacturing experience of a minimum of 20 (twenty) years including predecessor company's experience (if any).						
11.10.1.1	Manufactured in USA/ CANADA/UK /EU/JAPAN.	Set	Tk.	5,628.00 Tk.	5,621 Tk.	5,594 Tk.	5,594

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11.10.1.2	Manufactured in TURKEY/ SOUTH KOREA/ MALAYSIA/ THAILAND/ VIETNAM.	Set	Tk.	4,078.00 Tk.	4,072 Tk.	4,045 Tk.	4,045
11.10.2	Up down suction unit Supplying of direct probe suction control complete with regulator filter, 2-liter capacity auto cleavable jar, tapper, hose, etc. High Suction : 0 - 100 kpa, Low Suction - 0 - 20 kpa Manufacturer must have valid ISO-9001, ISO-13485, 93/42/EEC (CE) certifications or UL listing or ELT certification and manufacturing experience of a minimum of 20 (twenty) years including predecessor company's experience (if any).						
11.10.2.1	Manufactured in USA/ CANADA/UK /EU/JAPAN.	Set	Tk.	24,484.00 Tk.	24,456 Tk.	24,349 Tk.	24,349
11.10.2.2	Manufactured in TURKEY/ SOUTH KOREA/ MALAYSIA/ THAILAND/ VIETNAM.	Set	Tk.	17,674.00 Tk.	17,646 Tk.	17,539 Tk.	17,539
11.10.3	Theatre suction Supply & installation of floor mobile theater suction unit complete with remote probe, 2 parallel brackets 2 nos autoclavable 2-liter Jar, regulator filter, etc. Manufacturer must have valid ISO-9001, ISO-13485, 93/42/EEC (CE) certifications or UL listing or ELT certification and manufacturing experience of a minimum of 20 (twenty) years including predecessor company's experience (if any).						
11.10.3.1	Manufactured in USA/ CANADA/UK /EU/JAPAN.	Set	Tk.	48,200.00 Tk.	48,115 Tk.	47,794 Tk.	47,794
11.10.3.2	Manufactured in TURKEY/ SOUTH KOREA/ MALAYSIA/ THAILAND/ VIETNAM.	Set	Tk.	35,367.00 Tk.	35,282 Tk.	34,960 Tk.	34,960
11.11	MEDICAL AIR PLANT						

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Supply & installation of continuous duty duplex medical air system which is a completely packaged assembly featuring 100% oil-less air compressors, electrical control cabinet, receiver and the necessary accessories required to meet and exceed the current code requirements. The compressed air supply regulated to give a distribution pressure up to 4 bar (50 psi) / 7 bar (100 psi). All major plant components with the exception of the air receiver shall be duplex to conform to the requirements of following standard: Each air compressor shall be driven by an electric motor. Under normal conditions, operation of a single air (duty) compressor shall generate the design pressure within the air receiver. In the event of a duty air compressor failure, or during periods of excessive demand, the standby air compressor failure, the first stage of a remote alarm shall be activated.

All components are pre-piped and prewired to single-point service connections. The only field connections are air intake, air discharge and power connection at the control panel. All interconnecting copper / brass piping as well as wiring shall be completed and operationally tested prior to shipment. Liquid tight conduit, fittings and junction boxes shall be provided for all control and power wiring.

Compressors shall be oil injected/oil-less screw compressors. The compressor shall be directly driven by an electric motor and incorporate an air filter and silencer. Each compressor shall be fitted with inter- coolers, aftercoolers, and auto / manual drains. The compressor electric motor shall be suitable for 415 VAC 3 phase 50 Hz. supply. The Medical Air compressors should be of the oil-less air-cooled design. The air compressor's features shall be a cast iron crankcase, Teflon-composite compression, rider rings, lubricated and sealed bearings, stainless steel reed valves, non-asbestos gaskets. No oil is used in the operation of the compressors, so the discharge air is 100% oil-free. A fan-type compressor pulley shall provide cooling with an air shroud.

The system includes a pressure storage tank of standard rating. The tank shall be equipped with a pressure gauge, safety relief valve, 3-way by-pass, gauge glass, and automatic tank drain with manual override.

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It also includes standard equipment like compressor discharge check valves of bronze construction, safety relief valves, bronze intake and discharges flexible connectors; solenoid unloads for reliable no-load starting, isolation valves, high discharge temperature shut-down switches, pressure control switches as well as copper tubing with shut-off cock for gauge and switches. A minimum duplex or above set of similar air compressors shall be used.

The system should include a UL/CE labeled control panel in a suitable enclosure. The panel should include/(consist of) the following standard accessories for each pump: Externally operable circuit breaker with a door interlock, control circuit transformer with fused primary and secondary coils, H-O-A switch, run light, hour meter, and magnetic starter with three-leg overload protection and reset switch. The panel should be equipped with a multiple position selector switch for (selection of) normal operation (automatic alternation) or manual selection of lead and lag pumps if one of the pumps is taken out of service due to scheduled maintenance.

Local audible and visual alarms are to be provided as per the following standard for compressor thermal malfunction and "Backup in use." The alarms should include indicating lights as well as the horn. In addition, the thermal malfunction shut-down is to be provided with a manual reset. The audible alarm should be acknowledged with the "Silence" button. The visual alarm will remain energized until the problem has been corrected. Each alarm function should include a set of dry contacts for connection to the master alarm. All control and alarm functions will remain energized while any compressor in the system remains electrically online.

Field adjustable control switches shall be provided to pre-set to operate the lead compressor between 100 PSIG and 125 PSIG. The lag compressor will automatically start at 95 PSIG if the lead compressor fails to operate.

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The duplexed filter and dryer module shall incorporate high-efficiency oil coalescing filters, heatless regenerative desiccant dryers, impregnated activated carbon filters, and bacterial filters. The performance of the filters shall be according to the below specifications: • Oil coalescing high-efficiency filter: mass efficiency of min 99%, tested according to ISO 8573-2 & ISO 12500-1; • Activated carbon filter: max remaining total oil content of 0,003 mg/m³, tested according to ISO 8573-5 & ISO12500-2; • Bacterial filter: particle count efficiency of 99% at MPPS=0.06µm, tested according to ISO 12500-3. • Contaminants in the delivered air downstream of the bacteria filters shall be maintained at levels below those shown in the table below: Each dryer tower shall have the water concentration in the delivered air continuously monitored by a dedicated sensor providing an alarm indication for high dew point on the respective dryer as a backup to the alarm provided by the hygrometer with digital display. The outlet air pressure shall be regulated through a duplex arrangement of non-relieving pressure regulators and protected from over-pressure by duplex pressure safety valves.

Each unit should be consist of two identical banks of air treatment equipment, piped in parallel and provided with valves to the by-pass either filter set for element replacement, maintenance, and repair work on one of the sets while still treating compressed medical air through the other set without any sacrifice in air quality.

0.5-micron after-filters should be excellent efficiency coalesces with particle removal down to 0.5 microns.

Digital dew point and CO monitors with alarm set points at 39°F and 10 PPM are to be provided with dry contacts for connection to remote alarm panels. A "demand check" for maintenance is to be included as per the following standards:

Tank specification : painted ASME tank

Power supply : 380 volts 50 Hz 3 phase

The quality of Medical Air must be in compliant with British/European/American Pharmacopeia

Contaminant	Threshold
H ₂ O	67ppm v/v (-46°C atm. dp)

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CO	5 ppm v/v
CO ₂	500 ppm v/v
SO ₂	1 ppm v/v
NO	2 ppm v/v
NO ₂	2 ppm v/v

Dry particulates ISO 8573-1 particle purity Class 2

Oil (droplet or mist) 0.1 mg/m³

Standard: HTM-02-01/ HTM-2022/ NFPA 99/DIN / JIS or equivalent.

Manufacturer must have valid ISO-9001, ISO-13485, 93/42/EEC (CE) certifications or UL listing or ELT certification and manufacturing experience of a minimum of 20 (twenty) years including predecessor company's experience (if any).

Pressure: 4 bar; Additional 7 bar supply must be available for surgical air

11.11.1 Country of origin : USA / CANADA /UK / EU / JAPAN

11.11.1.1	Plant capacity: minimum 500 LPM	No.	Tk.	31,59,808.00 Tk.	31,59,673 Tk.	31,59,389 Tk.	31,59,389
11.11.1.2	Plant capacity: minimum 700 LPM	No.	Tk.	38,23,798.00 Tk.	38,23,646 Tk.	38,23,346 Tk.	38,23,346
11.11.1.3	Plant capacity: minimum 900 LPM	No.	Tk.	43,89,653.00 Tk.	43,89,463 Tk.	43,89,056 Tk.	43,89,056
11.11.1.4	Plant capacity: minimum 1100 LPM	No.	Tk.	52,25,597.00 Tk.	52,25,384 Tk.	52,24,956 Tk.	52,24,956
11.11.1.5	Plant capacity: minimum 1440 LPM	No.	Tk.	56,65,697.00 Tk.	56,65,471 Tk.	56,65,026 Tk.	56,65,026
11.11.1.6	Plant capacity: minimum 2000 LPM	No.	Tk.	67,18,527.00 Tk.	67,18,277 Tk.	67,17,815 Tk.	67,17,815
11.11.1.7	Plant capacity: minimum 3000 LPM	No.	Tk.	81,70,138.00 Tk.	81,69,844 Tk.	81,69,320 Tk.	81,69,320
11.11.1.8	Plant capacity: minimum 4000 LPM	No.	Tk.	91,07,394.00 Tk.	91,07,082 Tk.	91,06,558 Tk.	91,06,558

11.11.2 Country of origin : TURKEY/ SOUTH KOREA/ MALAYSIA/ THAILAND/ VIETNAM

11.11.2.1	Plant capacity: minimum 500 LPM	No.	Tk.	22,13,536.00 Tk.	22,13,418 Tk.	22,13,134 Tk.	22,13,134
11.11.2.2	Plant capacity: minimum 700 LPM	No.	Tk.	26,78,607.00 Tk.	26,78,477 Tk.	26,78,177 Tk.	26,78,177
11.11.2.3	Plant capacity: minimum 900 LPM	No.	Tk.	30,75,303.00 Tk.	30,75,138 Tk.	30,74,731 Tk.	30,74,731
11.11.2.4	Plant capacity: minimum 1100 LPM	No.	Tk.	36,60,642.00 Tk.	36,60,460 Tk.	36,60,030 Tk.	36,60,030
11.11.2.5	Plant capacity: minimum 1440 LPM	No.	Tk.	39,68,788.00 Tk.	39,68,594 Tk.	39,68,149 Tk.	39,68,149
11.11.2.6	Plant capacity: minimum 2000 LPM	No.	Tk.	47,05,845.00 Tk.	47,05,632 Tk.	47,05,170 Tk.	47,05,170
11.11.2.7	Plant capacity: minimum 3000 LPM	No.	Tk.	57,22,236.00 Tk.	57,21,989 Tk.	57,21,465 Tk.	57,21,465
11.11.2.8	Plant capacity: minimum 4000 LPM	No.	Tk.	63,78,316.00 Tk.	63,78,056 Tk.	63,77,532 Tk.	63,77,532

11.12 AGSS PLANT

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ACTIVE WASTE ANESTHETIC GAS SCAVENGING SYSTEM

Supply & installation of an active waste anesthetic gas scavenging system shall be duplex/triplex/ quadruplet pump unit with main control panel.

Anesthetic gas scavenging system shall be an active system that removes excess anesthetic gas purged from a semi-re-circulating anesthesia machine and scavenges it out of operating theaters and recovery areas, thereby eliminating the possible long term health hazards to exposed medical staff.

AGSS blower system uses a blower pump unit for low suction scavenging source, the main control panel, remote control panels, and blower type flow control units for which compressed air supply is unnecessary. The Blower Pump Unit in a plant room is activated by the main Control Panel and operated by remote control panels, which can be installed at any convenient location either in or close by theaters and recovery areas.

The duplex/triplex/quadruplet pump unit provides increased reliability, prolonged pump life, and larger system capacity, covering 20 terminal flow control units.

The Carrier tube connected to the anesthesia machine carries excess gas to the corrugated Interface, where excess gas is held once and sucked into a braided scavenging tube. To keep moderate suction in the interface, room air shall be drawn from the bottom of the Interface. A scavenging tube with a specific adapter is plugged into the outlet port of the flow control unit.

Duplex blower pump unit, 385 VAC, 50 Hz, 3 Phase. Capacity: 580 LPM

Standard:HTM-02-01/ HTM-2022/NFPA 99/ DIN / JIS or equivalent

Manufacturer must have valid ISO-9001, ISO-13485, 93/42/EEC (CE) certifications or UL listing or ELT certification and manufacturing experience of a minimum of 20 (twenty) years including predecessor company's experience (if any).

11.12.1 Country Of Manufacture: USA/ CANADA/UK/EU/JAPAN

11.12.1.1 Duplex blower pump, 01 unit per hospital

No.	Tk.	11,06,551.00 Tk.	11,06,473 Tk.	11,06,259 Tk.	11,06,259

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11.12.1.2	Main control panel, 01 unit per hospital	No.	Tk.	2,82,171.00 Tk.	2,82,109 Tk.	2,81,894 Tk.	2,81,894
11.12.1.3	Remote control unit (recessed type), 01 unit per OT	No.	Tk.	74,663.00 Tk.	74,653 Tk.	74,621 Tk.	74,621
11.12.1.4	Blower type flow control unit (recessed type), 01 unit per OT	No.	Tk.	1,02,723.00 Tk.	1,02,719 Tk.	1,02,707 Tk.	1,02,707
11.12.1.5	Scavenging tube set per OT, 01 unit per OT	No.	Tk.	64,890.00 Tk.	64,886 Tk.	64,874 Tk.	64,874
11.12.2	Country of origin : TURKEY/ SOUTH KOREA/ MALAYSIA/ THAILAND/ VIETNAM						
11.12.2.1	Duplex blower pump, 01 unit per hospital	No.	Tk.	7,77,404.00 Tk.	7,77,333 Tk.	7,77,118 Tk.	7,77,118
11.12.2.2	Main control panel, 01 unit per hospital	No.	Tk.	1,98,673.00 Tk.	1,98,613 Tk.	1,98,398 Tk.	1,98,398
11.12.2.3	Remote control unit (recessed type), 01 unit per OT	No.	Tk.	52,531.00 Tk.	52,521 Tk.	52,489 Tk.	52,489
11.12.2.4	Blower type flow control unit (recessed type), 01 unit per OT	No.	Tk.	72,078.00 Tk.	72,075 Tk.	72,062 Tk.	72,062
11.12.2.5	Scavenging tube set per OT, 01 unit per OT	No.	Tk.	45,595.00 Tk.	45,591 Tk.	45,580 Tk.	45,580
11.13	Installation of the total system including marking, color coding, copper jointing, all related civil/electrical works, testing & commissioning, and 1-year operation, maintenance servicing of the system and providing as-built drawings (4 sets), etc. all complete as required and as per the direction of Engineer.						
11.13.1	Up to 100 bed	Job	Tk.	5,24,995.00 Tk.	5,15,536 Tk.	4,79,837 Tk.	4,79,837
11.13.2	Above 100 bed and up to 300 bed	Job	Tk.	7,34,995.00 Tk.	7,21,751 Tk.	6,71,772 Tk.	6,71,772
11.13.3	Above 300 bed	Job	Tk.	10,49,991.00 Tk.	10,31,071 Tk.	9,59,673 Tk.	9,59,673
11.14	MEDICAL GAS , GAS CYLINDER AND VIE						
11.14.1	GAS CYLINDER						
	Supply & installation of a high-pressure gas cylinder (without gas). The working pressure should be 2000-2200psi and the rupturing pressure shall be within 3600-4000psi. The cylinder is approved by the Explosive Department of Bangladesh or competent authority.						
	i. Principal element:						
	Test pressure: 250 kgf/cm ²						
	Filling pressure: 150 kgf/cm ²						
	ii. Material of Construction: Intermediate Manganese Steel						
	iii. Construction: By hot spinning of seamless steel tube						
	iv. Minimum wall thickness: 4.2 mm						
	v. Safety Factor: 2.26						
	vi. Cylinder Dimension:						
	Length: 1360 mm (approx.)/775mm (approx.)						
	Body Diameter: 232 mm (approx.)/139 mm (approx.)						

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	Quality Standard: BS/DOT/ISO Certificate must be submitted with the offer.						
11.14.1.1	Oxygen Cylinder 6-7 cubic meter	No.	Tk.	20,814.00 Tk.	20,814.00 Tk.	20,814.00 Tk.	20,814.00
11.14.1.2	Oxygen Cylinder 9-10 cubic meter	No.	Tk.	31,218.00 Tk.	31,218.00 Tk.	31,218.00 Tk.	31,218.00
11.14.1.3	Nitrous Oxide 5 - 7 cubic meter	No.	Tk.	20,814.00 Tk.	20,814.00 Tk.	20,814.00 Tk.	20,814.00
11.14.1.4	Compressed Air 6-7 cubic meter	No.	Tk.	20,814.00 Tk.	20,814.00 Tk.	20,814.00 Tk.	20,814.00
11.14.1.5	Compressed Air 9-10 cubic meter	No.	Tk.	31,218.00 Tk.	31,218.00 Tk.	31,218.00 Tk.	31,218.00
11.14.2	MEDICAL GAS						
	Supply of medical graded oxygen, compressed air, and nitrous oxide gas. The gas supplier shall be approved by the Drug Authority of Bangladesh						
11.14.2.1	Medical Oxygen	Cubic meter	Tk.	67.00 Tk.	67.00 Tk.	67.00 Tk.	67.00
11.14.2.2	Compressed Medical Air	Cubic meter	Tk.	59.00 Tk.	59.00 Tk.	59.00 Tk.	59.00
11.14.2.3	Medical Nitrous Oxide	Cubic meter	Tk.	994.00 Tk.	994.00 Tk.	994.00 Tk.	994.00
11.14.3	VACUUM INSULATED EVAPORATOR (VIE)						
	Installation, testing, commissioning for Liquid Medical Oxygen Storage Tank/VIE (Capacity- up to 20KL) without the cost of storage tank /VIE, including a license from Department of Explosive with RCC VIE Foundation (18' x 16' X 2') & inside site development to VIE Fencing, VIE Fencing (18' x 16' x 6') , entrance door of 2 spans each 3' wide & 3' wide emergency exit door with fittings; liquid Oxygen spillage pit, Earthing and Lightening Arrestor as necessary, Piping, safety valve, etc. (VIE to Vaporizer to Control Panel), DATA ONLINE cable & fittings, Fittings and connector for level gauge, Vaporizer fitting and fixing, VIE Control Panel fitting and fixing, VIE Transportation and Shifting. VIE & fencing should be properly painted. Safety Instruction Sign and symbol must be installed appropriately.						
11.14.4	Liquid Medical Oxygen	Job Liter	Tk. Tk.	12,45,927.00 Tk. 44.50 Tk.	11,96,099.00 Tk. 44.50 Tk.	11,34,940.00 Tk. 44.50 Tk.	11,34,940.00 44.50

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Subhead- 12
Solar Energy Related Works

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk)	Unit Rate in Rajshahi & Rangpur Zone (Tk)

12.1 OFF- GRID SOLAR PANEL SYSTEM :

Supplying, installation, testing & commissioning of following capacity solar system (off grid) for 2 Hrs backup with required quantities of mono / poly crystalline silicon solar PV modules, Solar suited Deep Cycle Lead Acid battery (12V), with required size maximum power point tracking (MPPT)/PWM charge-controller & inverter as per relevant international standards & certification such as IEC / CE / UL as per following specification to produce AC- 220V, 50Hz pure sine wave for suitable use of all standard AC appliances with battery racks / cabinet, solar PV mounting structure, combiner box, fuse box, meter etc. system includes compatible solar cables, equipotential bonded and earthed with the building earth electrode which is conventional and / or chemical electrode system and all accessories as required to complete the installation with one year free operation & maintenance of the system which shall have the following features:

SOLAR PV MODULES/PANEL:

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk)	Unit Rate in Rajshahi & Rangpur Zone (Tk)
	I. Parameters for PV Panel should be at Standard Test Condition of solar irradiance of 1000 W/m², Cell Temperature of 25 degree Celsius and AM of 1.5g. II. Solar PV module / panel shall be in conformity with the requirement of BDS IEC 61215, IEC 61730 (latest edition) along with VDE/NEMA/JIS/BS standards. Certificate issued by the internationally recognized authority such as CE / TUV /DNV or equivalent certifying body shall have to be submitted by the bidder for the above mentioned international standard. Manufacturing facility should be ISO9001, ISO14001 quality management system certified. III. Solar panels shall be installed pointing to the right direction to capture most of the solar energy to transform it into electricity with the facility to be adjusted from the horizontal to 12 degree in summer and to 35 degree in winter to get the maximum efficiency and must face the true south in our country. For fixed panel mounting system, the panels must be tilted (22.5 ± 1) degree with horizontal and must face the true south in BANGLADESH. IV. The average efficiency of PV module should be minimum 17%. V. The complete PV module shall be diode protected at junction box to protect reverse current. VI. Operating temperature range should be -40 to 85 Degree Celsius. VII. Power de-rating allowed should be not more than (-0.41%)/Degree Celsius VIII. Panels should be constructed with anti-reflective glass, anti Potential Induced Degradation(PID), IEC 61701 IX. Modules fitted with anodized aluminum frames or, if without frame, two-glass modules. X. Resistance to a maximum pressure load of 5400 Pa and vacuum of 2400 Pa (according to BDS IEC 61215)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk)	Unit Rate in Rajshahi & Rangpur Zone (Tk)

XI. Each module will be provided with a clearly visible identifier bearing the name, the model of the module and a visual identification or a serial number which allows the traceability of the date of manufacture in accordance with standard NF EN 50380

XII. Each combiner box of PV module shall be diode protected to ensure any back flow current to the PV array and may have fuse of adequate ratings in DC positive line of the PV array and wire terminals. The main combiner box shall have lightning surge protective device of as per nominal voltage of the combiner box both in positive and negative line in order to ensure the bypass diode always function even in thunder storm. The fuse, if exists, shall also have disconnection switch. The box shall be completely water proof according to IP 68.

XIII. Product warranty against manufacturing defects : minimum 12 years and their replacement during this period.

XIV. Performance warranty: linear degradation, minimum 98% at 1 year, then linear with minimum 90% at 10 years, and 80% at 25 years

Solar panel from Sunpro/Vikram/Saronic/Suntech/ULICA/Canadian Solar/JA Solar/Trina Solar/Longi or equivalent.

CHARGE CONTROLLER:

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk)	Unit Rate in Rajshahi & Rangpur Zone (Tk)
	MPPT / PWM (Pulse Wave Modulator) solar charge controller shall be protected from: I) Overcharge protection (adjustable) II) Over discharge protection (for DC load and less than 200 Wp system) III) Battery reverse current protection IV) Overloading protection V) Temperature compensated charging VI) Short circuit protection VII) Reverse polarity connection protection VIII) Lightning induced surge current protection Power consumption should be less than 20 mw. The controller should be microprocessor controlled with wide input range, cooling fan temperature compensation (-3 to 7mV / cell / Celsius), more than one-step charging to provide quick and safe charging for battery, 7 modes timer control (on / off DC load) selectable, automatic etc. as required. IX. Power conversion efficiency: 90% INVERTER: The Inverter is specially designed for DC to AC power which provides pure sine wave. Supplier is allowed to use Off Grid Inverter for designing the system keeping in mind that, utility grid cannot be used for battery charging, they may use battery bank for reference input. The inverter(s) shall comply with the following requirements: I. Adopt power frequency transformed, pure sine wave output, adapt to different load. II. Excellent protection design against output short circuit, working reliably. III. High inverting efficiency, energy saving and environmental protection. IV. LCD + LED display show the working status clearly.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk)	Unit Rate in Rajshahi & Rangpur Zone (Tk)
	V. Design, manufacturing, performance, testing, safety, quality and environmental management shall be in accordance to the BDS IEC 62109/BS/VDE or equivalent international standards. VI. Should conform to ISO 9001, 14001 & 45001 standard. VII. The Inverter manufacturer shall have at least 05 (five) years of experience, nominal input voltage: 24/48V DC, output : 220V AC, output waveform : pure / modified sine wave, self consumption : less than 1 (one) watt, Efficiency : 97% or higher at operating load range from 10% to 100% rated load, Energy source : Priority to solar then battery. VIII. The Inverter shall be protected from lightning induced current by surge protective device of adequate rating both in DC and AC side in parallel at the entry and exit terminal of the inverter. The inverter shall also be protected for overload and over current protection from both DC and AC side. IX. Frequency ranges: 50-60 Hz, Relative humidity: 0- 95%, non-condensing, Operating temperature range: 0- 55°C, Cooling method: Natural Convention, Topology -Transformerless , Noise - <30dB , Protection – IP65. X. Brand: Solar Inverter from SAJ/Solis/Huawei or equivalent BATTERY: Solar suited Deep Cycle Lead Acid battery(12V) Compliance : ISO9001 & ROHS (Restriction of Hazardous Substances) certified company. ENERGY METER:					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk)	Unit Rate in Rajshahi & Rangpur Zone (Tk)

Supplying and installation of energy meters with following features:
 I. Single phase / three phase (as per requirement)
 II. Energy meter to be provided to record the amount of solar energy provided from the solar system.

GENERAL GUIDELINE/CRITERIA:

I. The bidder shall examine the site before the design of solar system & its components
 II. The bidder shall have facilities and proper tools and machineries for installing, testing & commissioning of solar panel.
 III. Adequate space & height shall be provided in the rows of panels for easy air flow to avoid excessive heat generation in the panel and to provide access for rain water drainage and damage to protect from dirty water. Minimum air gap between two panels shall be 25 mm.

IV. All frames of the PV module, combiner box, inverter etc. shall be equipotential bonded and earthed with the building earth electrode which is conventional and / or chemical electrode system with soil conductivity enhancing material that the earth resistance must be less than 1 Ohm as per related standard and code of practice.

V. The solar panel mounting shall be of galvanized iron or equivalent to ensure rust protection of the installation. All nut bolts shall be of stainless steel (SS) or galvanized mild steel (MS) materials.

VI. After successful completion, testing & commissioning of the whole system the contractor shall have to train nominated person(s) of the user for a period of at least 2 days.

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk)	Unit Rate in Rajshahi & Rangpur Zone (Tk)
	VII. After completion of whole system and before handing over the system to the concerned authority, the contractor must have to provide minimum 30 days' satisfactory operation for performance evaluation. VIII. Technical specification with catalogue of PV module, inverter must be submitted with technical offer. IX. Only approved cable shall be used for wiring. X. Sufficient AC and DC circuit breakers shall be used to ensure proper safety of the system.	kWp	183,490.00	183,490.00	183,490.00	183,490.00
12.2	ON - GRID SOLAR PANEL SYSTEM : Supplying, installation, testing & commissioning of solar power system (on grid / grid tie) with required quantities of mono / poly crystalline silicon solar PV modules, inverter, energy meter, etc. as per following standards, specifications and certification. The system will be able to produce power for supplying to grid with required compatible solar cables (DC cables) and all necessary accessories to complete the installation providing one-year free operation & maintenance of the system. Solar system shall have to comply following specification: SOLAR PV MODULE/PANEL: SPECIFICATIONS FOR SOLAR PANEL:					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk)	Unit Rate in Rajshahi & Rangpur Zone (Tk)
	I. Parameters for PV Panel should be at Standard Test Condition of solar irradiance of 1000 W/m², Cell Temperature of 25 degree Celsius and AM of 1.5g. II. Solar PV module / panel shall be in conformity with the requirement of BDS IEC 61215, IEC 61730 (latest edition) along with VDE/NEMA/JIS/BS standards. Certificate issued by the internationally recognized authority such as CE / TUV /DNV or equivalent certifying body shall have to be submitted by the bidder for the above mentioned international standard. Manufacturing facility should be ISO9001, ISO14001 quality management system certified. III. Solar panels shall be installed pointing to the right direction to capture most of the solar energy to transform it into electricity with the facility to be adjusted from the horizontal to 12 degree in summer and to 35 degree in winter to get the maximum efficiency and must face the true south in our country. For fixed panel mounting system, the panels must be tilted (22.5 ± 1) degree with horizontal and must face the true south in BANGLADESH. IV. The average efficiency of PV module should be minimum 17%. V. The complete PV module shall be diode protected at junction box to protect reverse current. VI. Operating temperature range should be -40 to 85 Degree Celsius.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk)	Unit Rate in Rajshahi & Rangpur Zone (Tk)
	VII. Power de-rating allowed should be not more than (-0.41%)/Degree Celsius VIII. Panels should be constructed with anti-reflective glass, anti PID, IX. Modules fitted with anodized aluminum frames or, if without frame, two-glass modules. X. Resistance to a maximum pressure load of 5400 Pa and vacuum of 2400 Pa (according to BDS IEC 61215) XI. Each module will be provided with a clearly visible identifier bearing the name, the model of the module and a visual identification or a serial number which allows the traceability of the date of manufacture in accordance with standard NF EN 50380 XII. Each combiner box of PV module shall be diode protected to ensure any back flow current to the PV array and may have fuse of adequate ratings in DC positive line of the PV array and wire terminals. The main combiner box shall have lightning surge protective device of as per nominal voltage of the combiner box both in positive and negative line in order to ensure the bypass diode always function even in thunder storm. The fuse, if exists, shall also have disconnection switch. The box shall be completely water proof according to IP 68. XIII. Product warranty against manufacturing defects : minimum 12 years and their replacement during this period XIV. Performance warranty: linear degradation, minimum 98% at 1 year, then linear with minimum 90% at 10 years, and 80% at 25 years. Solar panel from Sunpro/Vikram/Saronic/Suntech/ULICA/Canadian Solar/JA Solar/Trina Solar/Longi or equivalent.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk)	Unit Rate in Rajshahi & Rangpur Zone (Tk)

INVERTER:

The inverter shall be suitable for using on grid / grid tie solar panel. The inverter shall have following features:

- I. Inverter type: grid tie.
- II. Built in MPPT charge controller.
- III. AC grid voltage $230 \pm 5\%$ (single phase)/ $415v \pm 5\%$ (three phase) AC
- IV. AC grid frequency: 50 ± 4 Hz
- V. Power factor: $\cos\theta = 1$.
- VI. Operating temperature range: -25°C to 60°C
- VII. Relative humidity: 0- 95%, non- condensing
- VIII. Total harmonic distortion : $<3\%$
- IX. Efficiency: minimum 95%
- X. Noise <40 dB at 1m distance
- XI. Internal power consumption: <1 W for 1 kWp inverter
- XII. Communication port: RS 485 / RS 232 shall have the option to be incorporated with remote monitoring system.

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk)	Unit Rate in Rajshahi & Rangpur Zone (Tk)
	XIII. Degree of protection: according to IP65 and IEC 60529. XIV. Shall have integrated AC Short Circuit Current Protection XV. Shall have built in Anti Islanding protection XVI. Shall have protection against abnormal voltage and abnormal frequency. XVII. Shall have lightning induced current protection by surge protective device of adequate rating both in DC and AC side in parallel at the entry and exit terminal of the inverter. Shall also have over load and over current protection from both DC and AC side. XVIII. Compliance: ISO9001 & ROHS (Restriction of Hazardous Substances) certified company. XIX. Test result from BUET or Institute of Renewable Energy, Dhaka University for key specification items of solar inverter (self-consumption, efficiency, solar priority, dual mode with auto switching, power factor) shall be provided. XX. Brand: Solar Inverter from SAJ/Solis/Huawei or equivalent ENERGY METER: Supplying and installation of energy meters with following features: I. Single phase / three phase (as per requirement) II. Energy meter to be provided to record the amount of solar energy provided from the solar system. OPERATION AND MONITORING:					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk)	Unit Rate in Rajshahi & Rangpur Zone (Tk)

Following scopes should be included:

- I. Remote monitoring (web / smart phone based) using available technology such as GSM/GPRS/Ethernet etc.
- II. Local monitoring using LCD/LED display and data logger.
- III. Field programmability

GENERAL GUIDELINES/CRITERIA:

- I. The bidder shall examine the site before the design of solar system & its components
- II. The bidder shall have facilities and proper tools and machineries for installing, testing & commissioning of solar panel.
- III. Adequate space & height shall be provided in the rows of panels for easy air flow to avoid excessive heat generation in the panel and to provide access for rain water drainage and damage to protect from dirty water. Minimum air gap between two panels shall be 25 mm.
- IV. All frames of the PV module, combiner box, inverter etc. shall be equipotential bonded and earthed with the building earth electrode which is conventional and / or chemical electrode system with soil conductivity enhancing material that the earth resistance must be less than 1 Ohm as per related standard and code of practice.

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk)	Unit Rate in Rajshahi & Rangpur Zone (Tk)
	V. The solar panel mounting shall be of galvanized iron or equivalent to ensure rust protection of the installation. All nut bolts shall be of stainless steel (SS) or galvanized mild steel (MS) materials. VI. After successful completion, testing & commissioning of the whole system the contractor shall have to train nominated person(s) of the user for a period of at least 2 days. VII. After completion of whole system and before handing over the system to the concerned authority, the contractor must have to provide minimum 30 days' satisfactory operation for performance evaluation. VIII. Technical specification with catalogue of PV module, inverter must be submitted with technical offer. IX. Only approved cable shall be used for wiring. X. Sufficient AC and DC circuit breakers shall be used to ensure proper safety of the system.	KWp	137,334.00	137,334.00	137,334.00	137,334.00

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Subhead-13
Spare Parts For Vehicles Repair

Sl. No	Description of item	Unit	Dhaka & Mymensingh ,Chattogram & Sylhet,Khulna,Barishal & Gopalganj ,Rajshahi & Rangpur Zone RATE in TK (WITHOUT PROFIT, OVERHEAD)												
			Mitsubishi Pajero Sport	Mitsubishi Outlander Jeep	Lancer Car 1244 cc/ Honda	Corolla Car 1200 cc	Starlet Car 1000 cc	Land Cruiser Jeep 145 HP	Isuzu Trooper Jeep	Mitsubishi (diesel) Jeep 95 HP	Microbus LiteAce	Microbus L 300	Mitsubishi Pajero Jeep	Toyota Prado Jeep	Nissan Sunny Car/ASX
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
13.1	Piston (4/6 nos/set)	1 set	8,500.00	24,750.00	5,800.00	6,000.00	4,800.00	10,500.00	9,000.00	10,500.00	6,000.00	6,000.00	8,500.00	12,000.00	6,500.00
13.2	Piston ring (16/24	1 set	8,938.00	10,313.00	3,800.00	3,600.00	3,800.00	4,500.00	4,800.00	4,500.00	5,500.00	4,000.00	8,500.00	8,500.00	4,800.00
13.3	Overhauling Kit	1 kit	6,500.00	8,250.00	4,000.00	3,600.00	3,200.00	5,500.00	4,800.00	6,000.00	3,500.00	4,000.00	6,500.00	10,500.00	3,500.00
13.4	Main and big end bearing	1 set	2,700.00	3,200.00	2,800.00	2,000.00	2,000.00	3,600.00	4,000.00	3,000.00	2,400.00	3,200.00	2,200.00	3,000.00	2,800.00
13.5	Engine head valve	1 set	10,313.00	13,063.00	4,500.00	4,800.00	4,800.00	8,500.00	5,500.00	7,000.00	7,000.00	7,000.00	8,500.00	14,000.00	11,000.00
13.6	Engine head valve guide	1 set	1,600.00	2,000.00	1,800.00	1,500.00	1,800.00	2,400.00	1,800.00	2,400.00	1,500.00	2,000.00	2,000.00	2,800.00	1,800.00
13.7	Connecting rod bush	1 set	1,800.00	1,800.00	2,000.00	800.00	800.00	1,100.00	1,600.00	1,500.00	1,500.00	1,500.00	1,600.00	1,800.00	0.00
13.8	Cam shaft	1 Pc.	1,650.00	3,025.00	1,925.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2,475.00	N/A	N/A
13.9	Oil pump	1 Pc.	18,000.00	23,375.00	4,000.00	4,000.00	3,800.00	12,500.00	9,500.00	16,000.00	4,800.00	14,500.00	14,000.00	19,400.00	6,500.00
13.10	Water pump	1 Pc.	4,813.00	7,563.00	4,500.00	2,000.00	2,000.00	6,000.00	5,800.00	5,500.00	2,600.00	4,500.00	3,500.00	6,500.00	4,500.00
13.11	A/C pump	1 Pc.	4,000.00	5,225.00	4,000.00	3,100.00	3,200.00	4,500.00	4,800.00	N/A	5,500.00	4,500.00	2,000.00	8,000.00	4,500.00
13.12	Pressure plate	1 Pc.	8,938.00	10,313.00	7,000.00	6,000.00	6,500.00	9,000.00	8,000.00	10,500.00	6,000.00	7,500.00	6,500.00	9,500.00	4,500.00
13.13	Clutch plate	1 Pc.	7,563.00	6,188.00	4,500.00	4,000.00	4,000.00	7,500.00	4,500.00	5,500.00	5,400.00	4,200.00	5,200.00	7,800.00	4,500.00
13.14	Distributor complete	1 Pc.	N/A	N/A	N/A	9,000.00	9,000.00	8,500.00	8,000.00	N/A	6,400.00	6,000.00	12,500.00	N/A	N/A
13.15	Carburettor complete	1 Pc.	37,125.00	41,250.00	25,000.00	24,000.00	14,000.00	27,000.00	28,000.00	N/A	28,000.00	N/A	38,500.00	5,200.00	4,500.00
13.16	Engine mounting (2 nos/set)	1 set	5,000.00	17,875.00	10,000.00	10,000.00	10,000.00	17,000.00	3,000.00	3,800.00	2,800.00	4,800.00	5,500.00	10,000.00	1,800.00
13.17	Engine fan	1 Pc.	4,000.00	5,500.00	3,000.00	3,000.00	3,000.00	3,000.00	3,500.00	3,400.00	3,500.00	2,500.00	5,225.00	N/A	N/A
13.18	Engine pulley	1 Pc.	3,438.00	5,775.00	2,000.00	2,000.00	2,400.00	3,000.00	2,800.00	2,800.00	2,800.00	2,500.00	4,400.00	N/A	N/A
13.19	Fan belt	1 Pc.	1,000.00	4,125.00	550.00	550.00	400.00	550.00	500.00	550.00	650.00	550.00	1,000.00	900.00	900.00
13.20	High tension wire with plug cap	1 set	7,563.00	8,800.00	4,800.00	4,500.00	4,500.00	6,500.00	5,000.00	N/A	6,500.00	5,500.00	7,563.00	8,500.00	6,000.00

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Sl. No	Description of item	Unit	Dhaka & Mymensingh ,Chattogram & Sylhet,Khulna,Barishal & Gopalganj ,Rajshahi & Rangpur Zone RATE in TK (WITHOUT PROFIT, OVERHEAD												
			Mitsubishi Pajero Sport	Mitsubishi Outlander Jeep	Lancer Car 1244 cc/ Honda	Corolla Car 1200 cc	Starlet Car 1000 cc	Land Cruiser Jeep 145 HP	Isuzu Trooper Jeep	Mitsubishi (diesel) Jeep 95 HP	Microbus LiteAce	Microbus L 300	Mitsubishi Pajero Jeep	Toyota Prado Jeep	Nissan Sunny Car/ASX
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
13.21	Dynamo complete set	1 set	4,000.00	34,000.00	15,000.00	14,000.00	14,000.00	1,500.00	18,000.00	16,000.00	12,500.00	15,000.00	4,000.00	25,000.00	16,000.00
13.22	Self starter	1 Pc.	16,000.00	24,750.00	6,500.00	5,000.00	5,000.00	8,500.00	8,500.00	9,500.00	9,500.00	7,500.00	12,000.00	N/A	N/A
13.23	C.B. point	1 Pc.	963.00	894.00	600.00	400.00	400.00	600.00	550.00	550.00	550.00	600.00	963.00	N/A	N/A
13.24	Condenser	1 Pc.	10,313.00	1,000.00	500.00	400.00	400.00	500.00	500.00	500.00	500.00	500.00	1,000.00	N/A	N/A
13.25	Mobil filter	1 Pc.	688.00	650.00	650.00	800.00	800.00	700.00	750.00	750.00	750.00	750.00	600.00	3,500.00	1,000.00
13.26	Fuel filter	1 Pc.	2,300.00	3,500.00	600.00	700.00	700.00	600.00	1,000.00	800.00	600.00	750.00	1,000.00	3,500.00	1,000.00
13.27	Air cleaner filter	1 Pc.	1,650.00	1,800.00	1,200.00	600.00	600.00	2,000.00	1,500.00	2,000.00	1,200.00	1,500.00	2,200.00	3,000.00	1,800.00
13.28	Cut out-12 V	1 set	N/A	N/A	N/A	2,000.00	2,000.00	2,000.00	2,000.00	1,000.00	2,000.00	2,000.00	N/A	N/A	N/A
13.29	Cut out-24 V	1 set	3,000.00	4,125.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	N/A	N/A
13.30	Horn	1 Pc.	700.00	700.00	700.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	700.00	N/A	N/A
13.31	Distributor cap	1 Pc.	2,000.00	5,500.00	2,000.00	2,000.00	2,000.00	2,000.00	3,000.00	2,000.00	2,000.00	2,000.00	2,000.00	5,500.00	8,500.00
13.32	Master cylinder kit	1 kit	1,600.00	1,800.00	1,000.00	2,000.00	1,600.00	3,000.00	3,000.00	2,000.00	1,500.00	2,000.00	1,000.00	N/A	N/A
13.33	Spark plug	1 Pc.	750.00	1,750.00	400.00	400.00	400.00	400.00	400.00	1,500.00	400.00	1,200.00	200.00	600.00	600.00
13.34	Chassis mounting	1 set	900.00	5,775.00	2,000.00	700.00	800.00	900.00	1,000.00	1,000.00	1,000.00	900.00	900.00	N/A	N/A
13.35	Release bearing	1 Pc.	2,200.00	4,000.00	1,800.00	1,800.00	1,800.00	2,000.00	2,000.00	1,800.00	1,800.00	2,000.00	1,700.00	2,500.00	2,000.00
13.36	Connecting rod (4/6 nos/set)	1 set	29,000.00	10,500.00	N/A	6,000.00	6,000.00	7,500.00	6,000.00	7,000.00	6,500.00	6,000.00	8,000.00	N/A	N/A
13.37	Shock absorber (4 nos/set)	1 set	10,000.00	38,500.00	11,000.00	10,000.00	11,000.00	14,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	14,000.00	14,000.00
13.38	Shock absorber mounting	1 set	6,600.00	7,000.00	3,000.00	3,000.00	3,000.00	3,200.00	4,500.00	4,500.00	5,000.00	5,000.00	4,000.00	N/A	N/A
13.39	Brake shoe/ pad complete	1 set	6,000.00	4,813.00	4,500.00	4,000.00	5,500.00	4,500.00	4,500.00	5,000.00	4,000.00	4,000.00	4,813.00	8,500.00	8,500.00
13.40	Wheel cylinder complete	1 Pc.	3,575.00	2,000.00	2,000.00	3,000.00	2,500.00	4,500.00	4,500.00	4,500.00	3,000.00	4,500.00	1,500.00	N/A	N/A
13.41	Wheel cylinder bucket	1 Pc.	100.00	100.00	100.00	150.00	150.00	150.00	150.00	200.00	200.00	200.00	100.00	N/A	N/A
13.42	Tie rod end	1 set	N/A	4,000.00	3,000.00	2,800.00	3,000.00	4,500.00	4,500.00	4,500.00	4,500.00	4,500.00	4,500.00	6,000.00	5,500.00
13.43	Ball joint	1 set	4,813.00	4,500.00	3,500.00	4,500.00	4,500.00	7,000.00	7,000.00	7,000.00	5,500.00	6,000.00	5,088.00	18,500.00	4,500.00

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Sl. No	Description of item	Unit	Dhaka & Mymensingh ,Chattogram & Sylhet,Khulna,Barishal & Gopalganj ,Rajshahi & Rangpur Zone RATE in TK (WITHOUT PROFIT, OVERHEAD												
			Mitsubishi Pajero Sport	Mitsubishi Outlander Jeep	Lancer Car 1244 cc/ Honda	Corolla Car 1200 cc	Starlet Car 1000 cc	Land Cruiser Jeep 145 HP	Isuzu Trooper Jeep	Mitsubishi (diesel) Jeep 95 HP	Microbus LiteAce	Microbus L 300	Mitsubishi Pajero Jeep	Toyota Prado Jeep	Nissan Sunny Car/ASX
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
13.44	Cross bearing	1 Pc.	1,500.00	2,063.00	1,000.00	1,000.00	1,000.00	1,500.00	1,500.00	2,000.00	1,500.00	2,000.00	1,500.00	7,000.00	3,000.00
13.45	Axle bearing	1 Pc.	4,500.00	7,000.00	2,000.00	1,500.00	1,500.00	4,000.00	2,500.00	2,000.00	1,800.00	1,800.00	2,000.00	N/A	N/A
13.46	Hubs bearing	1 Pc.	2,000.00	7,000.00	2,000.00	1,300.00	2,000.00	4,000.00	2,500.00	2,000.00	2,000.00	2,000.00	1,800.00	5,000.00	4,500.00
13.47	Mile meter cable	1 Pc.	1,500.00	4,813.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00
13.48	Clutch cable	1 Pc.	2,500.00	4,000.00	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00	2,500.00	2,500.00	2,500.00
13.49	Accelerator cable	1 Pc.	2,000.00	3,000.00	900.00	1,000.00	900.00	900.00	1,500.00	1,200.00	1,000.00	1,000.00	2,000.00	2,000.00	2,000.00
13.50	Hubs oil seal (2 nos/set)	1 set	1,650.00	1,000.00	1,500.00	1,200.00	1,000.00	1,800.00	1,800.00	1,800.00	1,200.00	1,200.00	1,000.00	4,000.00	4,000.00
13.51	Axle oil seal (2 nos/set)	1 set	1,000.00	1,000.00	1,000.00	900.00	900.00	1,900.00	1,200.00	1,000.00	2,000.00	1,000.00	1,000.00	4,500.00	2,000.00
13.52	Differential bearing (3nos/set)	1 set	3,500.00	6,000.00	4,000.00	4,000.00	4,000.00	6,000.00	4,500.00	4,500.00	4,500.00	4,000.00	3,500.00	4,500.00	3,500.00
13.53	Differential star pinion (2 nos/set)	1 set	6,000.00	6,000.00	5,000.00	5,000.00	5,000.00	8,000.00	7,000.00	6,500.00	5,500.00	8,000.00	6,000.00	5,500.00	5,500.00
13.54	Differential oil seal	1 Pc.	1,000.00	1,000.00	700.00	700.00	700.00	900.00	900.00	1,000.00	700.00	1,000.00	1,000.00	1,800.00	1,500.00
13.55	Kin pin bearing	1 Pc.	3,000.00	2,000.00	1,800.00	1,800.00	1,800.00	2,000.00	2,000.00	4,000.00	2,000.00	4,000.00	2,000.00	4,500.00	4,500.00
13.56	Top shaft bearing	1 Pc.	N/A	1,000.00	1,800.00	1,500.00	2,000.00	3,000.00	3,000.00	2,000.00	2,000.00	2,200.00	1,500.00	2,500.00	2,500.00
13.57	Second gear pinion	1 Pc.	4,000.00	2,000.00	3,500.00	3,500.00	3,500.00	4,000.00	4,000.00	3,500.00	3,000.00	3,000.00	4,000.00	4,500.00	4,000.00
13.58	First gear pinion	1 set	4,000.00	3,000.00	3,500.00	3,500.00	3,500.00	3,500.00	3,500.00	3,000.00	3,000.00	3,000.00	4,000.00	4,000.00	N/A
13.59	Synchronizer complete	1 set	26,000.00	18,000.00	18,000.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12,000.00	N/A	N/A
13.60	Synchronizer ring	1 set	3,000.00	12,000.00	1,800.00	1,800.00	1,800.00	4,000.00	4,000.00	4,000.00	1,500.00	1,500.00	3,000.00	2,000.00	2,500.00
13.61	Main shaft bearing	1 Pc.	4,000.00	1,000.00	2,000.00	2,000.00	2,000.00	2,500.00	2,500.00	2,500.00	2,000.00	2,000.00	2,000.00	500.00	500.00
13.62	Top gear pinion	1 Pc.	3,200.00	1,000.00	3,000.00	2,000.00	2,000.00	3,000.00	4,000.00	4,000.00	2,500.00	3,000.00	3,000.00	4,000.00	1,000.00

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Sl. No	Description of item	Unit	Dhaka & Mymensingh ,Chattogram & Sylhet,Khulna,Barishal & Gopalganj ,Rajshahi & Rangpur Zone RATE in TK (WITHOUT PROFIT, OVERHEAD												
			Mitsubishi Pajero Sport	Mitsubishi Outlander Jeep	Lancer Car 1244 cc/ Honda	Corolla Car 1200 cc	Starlet Car 1000 cc	Land Cruiser Jeep 145 HP	Isuzu Trooper Jeep	Mitsubishi (diesel) Jeep 95 HP	Microbus LiteAce	Microbus L 300	Mitsubishi Pajero Jeep	Toyota Prado Jeep	Nissan Sunny Car/ASX
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
13.63	Gear box oil seal (2 nos/set)	1 set	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,500.00	2,000.00	1,500.00	1,000.00	1,500.00	1,500.00	2,000.00	2,000.00
13.64	Top shaft oil seal	1 Pc.	500.00	1,000.00	500.00	500.00	500.00	1,000.00	800.00	1,000.00	600.00	600.00	1,000.00	2,500.00	2,500.00
13.65	Gear box mounting	1 Pc.	1,200.00	6,600.00	5,000.00	2,500.00	2,500.00	4,000.00	4,000.00	4,500.00	4,500.00	1,500.00	1,500.00	8,500.00	9,500.00
13.66	Door lock	1 Pc.	3,500.00	3,000.00	500.00	500.00	500.00	200.00	800.00	800.00	800.00	1,800.00	4,000.00	4,000.00	4,000.00
13.67	Door handle	1 Pc.	3,200.00	4,000.00	3,000.00	3,000.00	3,000.00	2,500.00	N/A	N/A	N/A	N/A	3,000.00	4,500.00	5,500.00
13.68	Door glass driving machine (manual)	1 Pc.	4,000.00	4,000.00	3,000.00	3,000.00	2,500.00	2,500.00	N/A	N/A	N/A	N/A	4,000.00	4,000.00	5,000.00
13.69	Head light complete	1 Pc.	7,000.00	32,000.00	2,000.00	2,500.00	2,000.00	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00	7,000.00	9,500.00	9,500.00
13.70	Side indicator light complete	1 Pc.	N/A	1,800.00	2,000.00	2,000.00	2,000.00	1,800.00	1,800.00	1,800.00	1,000.00	1,000.00	2,000.00	3,500.00	3,500.00
13.71	Back light	1 Pc.	5,000.00	30,000.00	8,000.00	2,800.00	2,800.00	4,000.00	2,000.00	2,000.00	4,000.00	5,500.00	6,000.00	6,000.00	6,000.00
13.72	Starting ignition switch/ starting switch	1 Pc.	4,800.00	12,000.00	14,000.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6,000.00	6,000.00	6,000.00
13.73	Wiper motor-12/24 Volt	1 Pc.	7,500.00	16,000.00	4,000.00	4,000.00	4,000.00	4,000.00	6,000.00	6,000.00	6,000.00	6,500.00	7,500.00	8,000.00	9,500.00
13.74	Wiper blade (2 nos/set)	1 set	500.00	500.00	500.00	1,000.00	1,000.00	1,200.00	1,000.00	1,000.00	1,000.00	1,000.00	500.00	1,000.00	1,000.00
13.75	Indicating flasher	1 Pc.	800.00	1,500.00	500.00	500.00	500.00	600.00	1,500.00	1,500.00	1,500.00	1,500.00	800.00	800.00	800.00
13.76	Dynamo carbon	1 Pc.	1,000.00	700.00	1,000.00	N/A	N/A	N/A	500.00	250.00	350.00	350.00	800.00	1,000.00	1,000.00
13.77	Dynamo rectifier (9 nos/set)	1 set	688.00	688.00	688.00	600.00	1,000.00	1,000.00	N/A	N/A	N/A	N/A	688.00	8,500.00	9,500.00
13.78	Dynamo bearing	1 Pc.	413.00	400.00	413.00	600.00	600.00	600.00	650.00	400.00	500.00	3,500.00	413.00	3,500.00	4,500.00
13.79	Bendix pinion	1 Pc.	2,000.00	1,400.00	1,800.00	2,000.00	2,000.00	3,000.00	3,000.00	2,500.00	2,000.00	2,000.00	1,500.00	4,000.00	3,500.00

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Sl. No	Description of item	Unit	Dhaka & Mymensingh ,Chattogram & Sylhet,Khulna,Barishal & Gopalganj ,Rajshahi & Rangpur Zone RATE in TK (WITHOUT PROFIT, OVERHEAD												
			Mitsubishi Pajero Sport	Mitsubishi Outlander Jeep	Lancer Car 1244 cc/ Honda	Corolla Car 1200 cc	Starlet Car 1000 cc	Land Cruiser Jeep 145 HP	Isuzu Trooper Jeep	Mitsubishi (diesel) Jeep 95 HP	Microbus LiteAce	Microbus L 300	Mitsubishi Pajero Jeep	Toyota Prado Jeep	Nissan Sunny Car/ASX
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
13.80	Self solenoid switch	1 Pc.	1,650.00	1,400.00	1,650.00	2,500.00	2,500.00	2,000.00	4,500.00	3,500.00	2,500.00	3,000.00	1,500.00	4,000.00	4,500.00
13.81	Self carbon bush with spring	1 Pc.	481.00	481.00	481.00	800.00	800.00	900.00	1,000.00	2,000.00	1,000.00	800.00	481.00	2,000.00	1,800.00
13.82	Dynamo armature rewinding	1 job	3,438.00	3,000.00	3,438.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3,200.00	4,000.00	3,500.00
13.83	Dynamo rotor coil rewinding complete	1 job	2,750.00	2,600.00	2,750.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2,750.00	3,000.00	3,800.00
13.84	Dynamo commutator	1 Pc.	N/A	3,200.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	3,438.00	4,000.00	5,000.00
13.85	Self armature complete	1 Pc.	5,600.00	3,200.00	4,000.00	4,000.00	4,000.00	4,000.00	4,800.00	4,200.00	4,000.00	4,000.00	3,500.00	6,000.00	6,500.00
13.86	Self armature rewinding complete	1 job	1,200.00	800.00	1,000.00	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00	1,000.00	7,500.00	8,500.00
13.87	Battery terminal	1 set	300.00	300.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	300.00	300.00	300.00
13.88	L.T. wire for wiring - 1 coil = 1 kg	P/kg	1,238.00	1,238.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	N/A	1,238.00	N/A	N/A
13.89	Ampere meter	1 Pc.	3,438.00	3,438.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	2,000.00	3,438.00	N/A	N/A
13.90	Head light switch	1 Pc.	4,000.00	13,000.00	2,000.00	1,800.00	2,000.00	2,500.00	3,500.00	2,000.00	2,000.00	2,000.00	4,000.00	4,500.00	10,000.00
13.91	Wiper switch	1 Pc.	4,000.00	18,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	4,000.00	4,000.00	4,000.00
13.92	Dipper switch	1 Pc.	N/A	18,000.00	1,200.00	1,200.00	1,200.00	1,200.00	1,200.00	1,000.00	1,000.00	1,000.00	4,000.00	4,000.00	7,000.00
13.93	Horn switch	1 Pc.	688.00	688.00	688.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	688.00	3,500.00	2,500.00
13.94	Dynamo pulley	1 Pc.	2,750.00	2,750.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	1,500.00	2,400.00	4,500.00	5,000.00
13.95	Dynamo fan	1 Pc.	2,063.00	2,063.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	2,063.00	5,000.00	7,000.00

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Sl. No	Description of item	Unit	Dhaka & Mymensingh ,Chattogram & Sylhet,Khulna,Barishal & Gopalganj ,Rajshahi & Rangpur Zone RATE in TK (WITHOUT PROFIT, OVERHEAD												
			Mitsubishi Pajero Sport	Mitsubishi Outlander Jeep	Lancer Car 1244 cc/ Honda	Corolla Car 1200 cc	Starlet Car 1000 cc	Land Cruiser Jeep 145 HP	Isuzu Trooper Jeep	Mitsubishi (diesel) Jeep 95 HP	Microbus LiteAce	Microbus L 300	Mitsubishi Pajero Jeep	Toyota Prado Jeep	Nissan Sunny Car/ASX
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
13.96	Wiper motor carbon (4 nos/set)	1 set	1,000.00	1,375.00	300.00	600.00	700.00	380.00	400.00	300.00	350.00	380.00	1,000.00	1,500.00	1,500.00
13.97	Wiper armature rewinding	1 job	2,500.00	2,750.00	1,200.00	1,200.00	1,200.00	1,200.00	1,200.00	1,200.00	1,200.00	1,200.00	2,500.00	2,500.00	3,000.00
13.98	Engine head gasket	1 Pc.	N/A	N/A	N/A	1,500.00	1,000.00	2,000.00	1,800.00	2,000.00	1,500.00	1,000.00	N/A	3,800.00	4,000.00
13.99	Wind shield glass rubber channel	1 set	8,000.00	N/A	3,000.00	3,500.00	3,500.00	3,000.00	3,500.00	3,000.00	3,500.00	3,500.00	6,000.00	N/A	N/A
13.100	Door glass rubber channel	1 set	16,000.00	N/A	3,000.00	3,000.00	3,000.00	1,800.00	3,500.00	2,500.00	3,500.00	3,500.00	13,000.00	N/A	N/A
13.101	Carburettor kit	1 kit	N/A	N/A	N/A	2,500.00	2,500.00	2,500.00	2,800.00	N/A	3,500.00	3,000.00	4,500.00	10,000.00	11,000.00
13.102	Engine liner (4/6 nos/set)	1 set	6,000.00	N/A	5,000.00	4,500.00	5,000.00	5,500.00	4,500.00	5,000.00	4,500.00	4,500.00	15,000.00	16,000.00	8,000.00
13.103	Looking glass mirror	1 Pc.	9,000.00	27,000.00	1,800.00	2,000.00	2,000.00	2,500.00	2,000.00	2,000.00	2,000.00	2,000.00	6,000.00	9,000.00	10,000.00
13.104	Rubber mat (5 nos/set)	1 set	2,200.00	3,438.00	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00	2,800.00	3,000.00	3,000.00	2,000.00
13.105	Injection nozzle (4 nos/set)	1 set	10,000.00	32,000.00	32,000.00	N/A	N/A	N/A	N/A	6,500.00	N/A	N/A	10,000.00	12,000.00	10,000.00
13.106	Fuel pump plunger	1 Pc.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,000.00	N/A	N/A
13.107	Denting, cutting, repairing, welding the whole body complete	1 job	25,000.00	23,000.00	20,000.00	20,000.00	20,000.00	27,000.00	22,000.00	22,000.00	27,000.00	27,000.00	25,000.00	27,000.00	20,000.00
13.108	Painting the whole body complete with DUCO paint	1 job	28,000.00	26,000.00	22,000.00	22,000.00	22,000.00	28,000.00	24,000.00	21,000.00	28,000.00	28,000.00	27,000.00	28,000.00	22,000.00

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Sl. No	Description of item	Unit	Dhaka & Mymensingh ,Chattogram & Sylhet,Khulna,Barishal & Gopalganj ,Rajshahi & Rangpur Zone RATE in TK (WITHOUT PROFIT, OVERHEAD)												
			Mitsubishi Pajero Sport	Mitsubishi Outlander Jeep	Lancer Car 1244 cc/ Honda	Corolla Car 1200 cc	Starlet Car 1000 cc	Land Cruiser Jeep 145 HP	Isuzu Trooper Jeep	Mitsubishi (diesel) Jeep 95 HP	Microbus LiteAce	Microbus L 300	Mitsubishi Pajero Jeep	Toyota Prado Jeep	Nissan Sunny Car/ASX
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
13.109	Crank shaft	1 Pc.	6,000.00	45,000.00	40,000.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30,000.00	N/A	N/A

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Subhead-14
Fire Detection & Protection System

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.1	FIRE EXTINGUISHER					
14.1.1	DRY CHEMICAL POWDER TYPE					
	Supply & fixing of the following capacities multi purpose ABC dry chemical powder stored pressure type with manometer system fire extinguisher suitable for repeated use complete with wall bracket, Nitrogen (N2) cartridge, easy refilling system etc. as per sample accepted & approved by the Engineer in Charge. Mono Ammonium Phosphate (minimum 40%) based ABC dry chemical agent & has a moisture-proof, anti-caking properties. Working pressure : 12 BAR minimum & Test pressure : 25 BAR minimum. Proper fire rating (as per NFPA 10/BS/EN) according to the capacity of the extinguisher. Manufacturer's certificate shall have to be submitted if needed. Also sample of the dry chemical powder will be tested by the proper authority in Bangladesh if needed.					
14.1.1.1	1 Kg. capacity.	Each	1,173.00	1174	1171	1171
14.1.1.2	2 Kg. capacity.	Each	1,489.00	1489	1486	1486
14.1.1.3	3 Kg. capacity.	Each	1,930.00	1930	1928	1928
14.1.1.4	5 Kg. capacity.	Each	3,570.00	3569	3567	3567
14.1.1.5	6 Kg. capacity.	Each	4,137.00	4137	4135	4135
14.1.2	CARBON-DI-OXIDE TYPE					
	Supply & fixing of the following capacities Carbon-di-Oxide stored pressure type with manometer system fire extinguisher suitable for repeated use complete with wall bracket, CO ₂ cartridge, easy refilling system etc. as per sample accepted & approved by the Engineer in Charge. Working pressure : 12 BAR minimum & Test pressure : 25 BAR minimum. Proper fire rating (as per NFPA 10 / BS / EN) according to the capacity of the extinguisher. Manufacturer's certificate shall have to be submitted if needed. Also sample of the Carbon-di-Oxide will be tested by the proper authority in Bangladesh if needed.					
14.1.2.1	3 Kg. capacity.	Each	3,191.00	3,191.00	3,189.00	3,189.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.1.2.2	5 Kg. capacity.	Each	5,083.00	5083	5080	5080
14.1.3	FOAM TYPE Supply & fixing the following capacity foam type with manometer system fire extinguisher suitable for repeated use complete with wall bracket, easy refilling system etc. as per sample accepted & approved by the Engineer in Charge. Working pressure: 12 BAR minimum & Test pressure : 25 BAR minimum. Proper fire rating (as per NFPA 10 / BS / EN) according to the capacity of the extinguisher. Manufacturer's certificate shall have to be submitted if needed. Also sample of the foam type extinguisher will be tested by the proper authority in Bangladesh if needed.					
14.1.3.1	9 Liter capacity.	Each	3,860.00	3859	3855	3855
14.1.4	ACCESSORIES OF FIRE EXTINGUISHERS Providing & fixing of the following parts of fire extinguisher as per sample accepted/approved by the Engineer in Charge.					
14.1.4.1	Trigger.	Each	189.00	189.00	189.00	189.00
14.1.4.2	Hose pipe	Each	353.00	353.00	353.00	353.00
14.1.4.3	Nipple with nozzle	Each	139.00	139.00	139.00	139.00
14.1.4.4	Cartridge up to 6 Kg.	Each	1,135.00	1,135.00	1,135.00	1,135.00
14.1.4.5	ABC powder.	kg	202.00	202.00	202.00	202.00
14.1.4.6	Carbon-di-Oxide recharge	kg	233.00	233.00	233.00	233.00
14.1.4.7	Foam	liter	221.00	221.00	221.00	221.00
14.1.5	FIRE BALL Supply of 1.25 Kg Fireball with bracket filled with Non-Toxic Mono Ammonium Phosphate of minimum 40 grade (fire class C).	Each	1,892.00	1,892.00	1,892.00	1,892.00
14.1.6	FIRE BLANKET Supply and fixing of fire proof emergency Fire Blanket made of fire glass cloth . Dimension of the blanket should be minimum 6' × 6' . Working temperature is minimum 550 ° C.	Each	1,450.00	1,450.00	1,450.00	1,450.00
14.2	FIRE WATER PUMP (Engine Driven) With Controller					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	Supply , installation , testing & commissioning of UL listed and FM approved diesel engine driven fire pump complete with all related & essential accessories including control panel, listed casing relief valve and vacuum & pressure gauge at the suction and discharge side of pump respectively. The manufacturing company must have manufacturing experience of minimum 30 years . The pump shall be designed and installed in accordance with NFPA 20 standard. Each unit shall be UL listed and FM approved. It should be compatible with BMS supported UL listed and FM approved control panel. Type: Pumps shall be of the non-overloading, centrifugal, horizontally split / End Suction type allowing discharge of the liquid without disturbing the pipe connections and operating at not over 3000 rpm. Pumps shall be selected for a total efficiency of not less than 65%. Pump performance curves shall be submitted for approval together with the pump technical data. Pump performance Curves shall be conformed to NFPA 20. DIESEL ENGINE : The diesel engine shall be UL listed and FM approved suitable for rated pump capacity. The engine shall rated at standard conditions for 500 ft above sea level at 29.4°C by the testing laboratory. The engine shall be of a reputed manufacturer from which spare parts can be obtained locally. The engine shall be provided with an adjustable governor capable of regulating engine speed with a range of 10% between shut-off and maximum load conditions of the pump. The governor shall be set to maintain the rated pump speed at maximum pump load. Engines shall be provided with an over speed shutdown device. BATTERY & CHARGER :					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	The engine shall be provided with two maintenance free storage battery units, each having sufficient capacity, at 5°C (41°F) to maintain cranking speed recommended by the engine manufacturer through a 6 min cycle. Two means for recharging shall be provided. One shall be the generator furnished with the engine. The other shall be an automatically controlled charger taking power from the building power supply. FUEL TANK : The fuel tank shall be as per manufacturer's recommendation with rigid frame. Fuel tank shall have capacity of at least equal to 1 gallon per horsepower plus 5% volume for expansion. Fuel tank shall be equipped with fuel supply line, return line, fill, drain, overflow, air vent and sight glass. COOLING SYSTEM & ENGINE EXHAUST PIPE : The engine shall be provided with close circuit cooling water circulation system. The exhaust pipe shall be galvanized steel sized in accordance with the manufacturer's recommendations. The exhaust pipe shall be as short as possible. CONTROLLER : The controller shall be UL listed & FM approved and BMS supported, completely assembled and wired from the factory. The controller shall be 12 volt / 24 volt., and shall be complete with all necessary components and accessories. The controller shall be operable automatically on sensing low pressure in the system and shall be provided with a pressure-actuated switch having independent high & low calibrated adjustments. The switch shall be responsive to water pressure in the fire protection system. The pressure-sensing element of the switch shall be capable of momentary surge pressure of 300 psi (min^m) without losing its accuracy, suitable provision shall be made for relieving pressure to the pressure actuated switch to allow testing of the operation of the controller and the pumping unit.					
14.2.1	Fire Pump End Suction (500 GPM, 9 BAR)	Each	3,359,566.00	3,359,566.00	3,359,566.00	3,359,566.00
14.2.2	Fire Pump End Suction (500 GPM, 10 BAR)	Each	3,676,228.00	3,676,228.00	3,676,228.00	3,676,228.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.2.3	Fire Pump End Suction (500 GPM, 12 BAR)	Each	4,125,684.00	4,125,684.00	4,125,684.00	4,125,684.00
14.2.4	Fire Pump End Suction (500 GPM, 14 BAR)	Each	4,166,543.00	4,166,543.00	4,166,543.00	4,166,543.00
14.2.5	Fire Pump End Suction (750 GPM, 9 BAR)	Each	4,105,254.00	4,105,254.00	4,105,254.00	4,105,254.00
14.2.6	Fire Pump End Suction (750 GPM, 10 BAR)	Each	4,156,328.00	4,156,328.00	4,156,328.00	4,156,328.00
14.2.7	Fire Pump End Suction (750 GPM, 12 BAR)	Each	4,217,618.00	4,217,618.00	4,217,618.00	4,217,618.00
14.2.8	Fire Pump End Suction (750 GPM, 14 BAR)	Each	4,375,949.00	4,375,949.00	4,375,949.00	4,375,949.00
14.2.9	Fire Pump Split Case (1000 GPM, 9 BAR)	Each	4,242,338.00	4,242,338.00	4,242,338.00	4,242,338.00
14.2.10	Fire Pump Split Case (1000 GPM, 10 BAR)	Each	4,769,222.00	4,769,222.00	4,769,222.00	4,769,222.00
14.2.11	Fire Pump Split Case (1000 GPM, 12 BAR)	Each	4,799,867.00	4,799,867.00	4,799,867.00	4,799,867.00
14.2.12	Fire Pump Split Case (1000 GPM, 14 BAR)	Each	4,937,201.00	4,937,201.00	4,937,201.00	4,937,201.00
14.2.13	Fire Pump Split Case (1250 GPM, 9 BAR)	Each	4,769,222.00	4,769,222.00	4,769,222.00	4,769,222.00
14.2.14	Fire Pump Split Case (1250 GPM, 10 BAR)	Each	4,820,297.00	4,820,297.00	4,820,297.00	4,820,297.00
14.2.15	Fire Pump Split Case (1250 GPM, 12 BAR)	Each	5,397,439.00	5,397,439.00	5,397,439.00	5,397,439.00
14.2.16	Fire Pump Split Case (1250 GPM, 14 BAR)	Each	5,668,133.00	5,668,133.00	5,668,133.00	5,668,133.00
14.3.	FIRE WATER PUMP (Motor driven) with controller Supply, installation, testing & commissioning of UL listed and FM approved electrically driven centrifugal type end suction / split case Fire Water Pump manufactured according to globally accepted international standard, shall be complete with skid mounted, coupled with motor, safety cover etc. The manufacturing company must have manufacturing experience of minimum 30 years . Motor shall be 420V / 3 phase / 50 HZ / 2900 rpm / Class F insulation / Enclosure IP55. Motor capacity shall be as per NFPA 20 and performance curve (from manufacturer) shall be provided to verify pump performance. Pumps shall be of the non-overloading allowing discharge of the liquid without disturbing the pipe connections and operating at not over 3000 rpm. Pumps shall be selected for a total efficiency of not less than 65%.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	Electric Motor: The electric motor shall be UL listed and FM approved suitable for rated pump capacity. Motor shall be 380V-420V / 3 phase / 50 HZ / 2900 rpm / Class F insulation / Enclosure IP55. Motor capacity shall be as per NFPA 20 and performance curve (from manufacturer) shall be provided to verify pump performance. The motor shall rated at standard conditions for 500 ft above sea level at 29.4°C by the testing laboratory. The motor shall be of a reputed manufacturer from which spare parts can be obtained locally. The motor shall be provided with an constant motor speed with a range of 10% between shut-off and maximum load conditions of the pump. Starting current of motor shall not exceed 2.5 times of rated current. Controller: The controller shall be UL listed and FM approved, BMS supported complete with MCCB / MCB / magnetic contactor / on-off push switch / indication lamp for phase indication, run, trip mode / ampere meter / volt meter / overload selector switch / phase failure protection device / dry operation protection device / volt guard / connector block / bus-bar / CT of rated capacity / ventilation fan / buzzer / cable lugs / and all other accessories. The panel shall be well dressed in side for safety purpose and for looking good. The panel shall be suitable for 3-phase 400 ± 5% volt 50Hz power supply. The panel shall be with auto/manual mode to operate the pumps controlled by pressure sensors. For fire pump the panel shall have option to start the pump automatically and stop shall be manual. Encloser of the panel shall be made with 16 SWG sheet steel and shall be painted with powder coating of red color approved as Fire code. Door of the panel shall be swing type with locking arrangement. Knob of main MCCB shall be extended in front screen. The panel shall be wall mounted type with fixing arrangement properly. The panel shall be manufactured in accordance with standard code of practice as NFPA/ NEMA / IEC / VDE / BS standards comprising of required capacity.					
14.3.1	Fire Pump End Suction (500 GPM, 9 BAR)	Each	2,099,729.00	2,099,729.00	2,099,729.00	2,099,729.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.3.2	Fire Pump End Suction (500 GPM, 10 BAR)	Each	2,440,226.00	2,440,226.00	2,440,226.00	2,440,226.00
14.3.3	Fire Pump End Suction (500 GPM, 12 BAR)	Each	2,667,223.00	2,667,223.00	2,667,223.00	2,667,223.00
14.3.4	Fire Pump End Suction (500 GPM, 14 BAR)	Each	2,888,546.00	2,888,546.00	2,888,546.00	2,888,546.00
14.3.5	Fire Pump End Suction (750 GPM, 9 BAR)	Each	2,213,228.00	2,213,228.00	2,213,228.00	2,213,228.00
14.3.6	Fire Pump End Suction (750 GPM, 10 BAR)	Each	2,553,724.00	2,553,724.00	2,553,724.00	2,553,724.00
14.3.7	Fire Pump End Suction (750 GPM, 12 BAR)	Each	2,769,372.00	2,769,372.00	2,769,372.00	2,769,372.00
14.3.8	Fire Pump End Suction (750 GPM, 14 BAR)	Each	3,121,219.00	3,121,219.00	3,121,219.00	3,121,219.00
14.3.9	Fire Pump Split Case (1000 GPM, 9 BAR)	Each	2,667,223.00	2,667,223.00	2,667,223.00	2,667,223.00
14.3.10	Fire Pump Split Case (1000 GPM, 10 BAR)	Each	2,894,221.00	2,894,221.00	2,894,221.00	2,894,221.00
14.3.11	Fire Pump Split Case (1000 GPM, 12 BAR)	Each	3,109,869.00	3,109,869.00	3,109,869.00	3,109,869.00
14.3.12	Fire Pump Split Case (1000 GPM, 14 BAR)	Each	3,348,217.00	3,348,217.00	3,348,217.00	3,348,217.00
14.3.13	Fire Pump Split Case (1250 GPM, 9 BAR)	Each	2,888,546.00	2,888,546.00	2,888,546.00	2,888,546.00
14.3.14	Fire Pump Split Case (1250 GPM, 10 BAR)	Each	3,121,219.00	3,121,219.00	3,121,219.00	3,121,219.00
14.3.15	Fire Pump Split Case (1250 GPM, 12 BAR)	Each	3,563,864.00	3,563,864.00	3,563,864.00	3,563,864.00
14.3.16	Fire Pump Split Case (1250 GPM, 14 BAR)	Each	3,915,711.00	3,915,711.00	3,915,711.00	3,915,711.00

14.4 JOCKEY PUMP with controller
(Pressure maintenance pump)

JOCKEY PUMP

Supply, installation of multistage jockey pump manufactured in accordance with globally accepted international standard or fire hydrant system to keep a certain pressure in water distribution system. The manufacturing company must have manufacturing experience of **minimum 30 years**. Pump shall be completed with motor suitable to meet performance curve of the pump. The motor shall be 420V / 3 phase / 50 HZ / 2900 rpm.

Controller: The controller shall be UL listed / FM approved, BMS supported complete with MCCB / MCB / magnetic contactor / on-off push switch / indication lamp for phase indication, run, trip mode / ampere meter / volt meter / overload selector switch / phase failure protection device / dry operation protection device / volt guard / connector block / bus-bar / CT of rated capacity / ventilation fan / buzzer / cable lugs / and all other accessories. The panel shall be well dressed in side for safety purpose and for looking good.

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	The panel shall be suitable for 3-phase 400 ± 5% volt 50Hz power supply. The panel shall with auto/manual mode to operate the pumps controlled by pressure sensors. . For jockey pump the panel shall be suitable to start-stop the pump automatically controlled by pressure sensor. Enclosure of the panel shall be made with 16 SWG sheet steel and shall be painted with powder coating of red color approved as Fire code. Door of the panel shall be swing type with locking arrangement. Knob of main MCCB shall be extended in front screen. The panel shall be wall mounted type with fixing arrangement properly. The panel shall be manufactured in accordance with standard code of practice as NFPA/ NEMA / IEC / VDE / BS standards comprising of required capacity.					
14.4.1	Jockey Pump (20 GPM, 9 Bar) (for 500 GPM Fire pump)	Each	214,387.00	214,387.00	214,387.00	214,387.00
14.4.2	Jockey Pump (20 GPM, 10 Bar) (for 500 GPM Fire pump)	Each	220,692.00	220,692.00	220,692.00	220,692.00
14.4.3	Jockey Pump (20 GPM, 12 Bar) (for 500 GPM Fire pump)	Each	226,998.00	226,998.00	226,998.00	226,998.00
14.4.4	Jockey Pump (20 GPM, 14 Bar) (for 500 GPM Fire pump)	Each	296,358.00	296,358.00	296,358.00	296,358.00
14.4.5	Jockey Pump (30 GPM, 9 Bar) (for 750 GPM Fire pump)	Each	226,998.00	226,998.00	226,998.00	226,998.00
14.4.6	Jockey Pump (30 GPM, 10 Bar) (for 750 GPM Fire pump)	Each	239,609.00	239,609.00	239,609.00	239,609.00
14.4.7	Jockey Pump (30 GPM, 12 Bar) (for 750 GPM Fire pump)	Each	252,220.00	252,220.00	252,220.00	252,220.00
14.4.8	Jockey Pump (30 GPM, 14 Bar) (for 750 GPM Fire pump)	Each	315,275.00	315,275.00	315,275.00	315,275.00
14.4.9	Jockey Pump (40 GPM, 9 Bar) (for 1000 GPM Fire pump)	Each	264,831.00	264,831.00	264,831.00	264,831.00
14.4.10	Jockey Pump (40 GPM, 10 Bar) (for 1000 GPM Fire pump)	Each	290,053.00	290,053.00	290,053.00	290,053.00
14.4.11	Jockey Pump (40 GPM, 12 Bar) (for 1000 GPM Fire pump)	Each	327,886.00	327,886.00	327,886.00	327,886.00
14.4.12	Jockey Pump (40 GPM, 14 Bar) (for 1000 GPM Fire pump)	Each	365,719.00	365,719.00	365,719.00	365,719.00
14.4.13	Jockey Pump (50 GPM, 9 Bar)(for 1250 GPM Fire pump)	Each	277,442.00	277,442.00	277,442.00	277,442.00
14.4.14	Jockey Pump (50 GPM, 10 Bar)(for 1250 GPM Fire pump)	Each	302,664.00	302,664.00	302,664.00	302,664.00

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.4.15	Jockey Pump (50 GPM, 12 Bar)(for 1250 GPM Fire pump)	Each	334,191.00	334,191.00	334,191.00	334,191.00
14.4.16	Jockey Pump (50 GPM, 14 Bar)(for 1250 GPM Fire pump) (NB: pressure of jockey pump will be equal to the pressure of fire pump)	Each	353,108.00	353,108.00	353,108.00	353,108.00
14.5	FIRE BRIGADE CONNECTION : 2 - WAY Supply and installation of LPCB/ Kitemark certified 2-way fire brigade connection complete in all respect with all accessories. The unit shall have two Inlet connections of 2½" (63mm) male instantaneous with non-return valve and having 4" dia (100mm) flanged type outlet directly connected with stand pipe. It will have also one 25mm dia drain valve for drainage of water, rubber blank cap and chain for protection. Outlet 100mm dia shall be as per BS/EN or equivalent and shall be suitable to withstand pressure of 20kg/cm². It shall be suitable for using with Fire service & civil defence department of Bangladesh.	Each	37,833.00	37,833.00	37,833.00	37,833.00
14.6	FIRE BRIGADE CONNECTION : 4 - WAY Supply and installation of LPCB/ Kitemark certified 4 - way fire brigade connection complete in all respect with all accessories. The unit shall have four Inlet connections of 2½" (63mm) male instantaneous with non-return valve and having 6" dia (150mm) flanged type outlet directly connected with stand pipe. It will have also one 25mm dia drain valve for drainage of water, rubber blank cap and chain for protection. Outlet 150mm dia shall be as per BS/EN or equivalent and shall be suitable to withstand pressure of 20kg/cm². It shall be suitable for using with Fire service & civil defence department of Bangladesh.	Each	63,055.00	63,055.00	63,055.00	63,055.00
14.7	FIRE HYDRANT UNIT (1½" dia) : Each 1½" dia fire hydrant unit shall be complete with the following components and accessories.					
14.7.1	HOSE ANGLE VALVE (LANDING VALVE) : 1½" dia Supply and installation of hose angle valve of 1½" (40mm) shall be made with brass. The angle valve shall be UL Listed / FM approved certified and working pressure shall be minimum 300 psi. Inlet shall be threaded end type.	Each	14,881.00	14,881.00	14,881.00	14,881.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.7.2	FIRE HOSE : 1½" dia Supply & installation of Single Jacket fire hose of 38mm dia 30 meter long with hose rack frame & nipple suitable to install inside the hydrant cabinet. The hose shall conform to NFPA 1961 . The hose shall be UL Listed / FM approved. Working pressure & burst test pressure shall be not less than 200 psi & 600 psi respectively, shall be made with special quality EPDM rubber as internal lining, suitable to withstand heat and polluted water, heat and abrasion resistance. Jacketting shall be made up of 100% polyester for extra strength. Hose shall be 30meter long in a single length and shall be with aluminium alloy body instantaneous male coupling in one end other end with instantaneous female coupling. Color of the hose pipe shall be white.	Each	17,025.00	17,025.00	17,025.00	17,025.00
14.7.3	Jet / spray nozzle : 1½" dia Supply & installation of UL listed / FM approved Jet/ spray nozzle having 40mm dia with male instantaneous coupling or shall be connected to the male/ female instantaneous coupling of 38mm hose pipe . The nozzle shall be operable in three modes: jet - spray - shut off. The nozzle shall be light weight and easy operable. Construction of the nozzle shall be of brass & Working pressure shall be not less than 100 psi. Test pressure shall be minimum 230 psi(16 bar) . Flow Capacity of nozzle shall not be less than 100 GPM @ 100 psi. Nozzle shall be installed inside the cabinet.	Each	7,945.00	7,945.00	7,945.00	7,945.00
14.8	FIRE HYDRANT UNIT (2½" dia): Each 2½" dia fire hydrant unit shall be complete with the following components and accessories.					
14.8.1	HOSE ANGLE VALVE (landing valve) : 2½" dia Supply and installation of Hose angle valve of 2½" (63mm) shall be made with brass & shall conform to NFPA 1961/BS. The angle valve shall be UL Listed / FM approved or LPCB/Kitemark certified and working pressure shall be 300 psi. Inlet shall be threaded end type/ flange type. Inlet shall be installed inside the hydrant cabinet. Coupling shall be suitable for using with Fire service & civil defence department of Bangladesh.	Each	18,916.00	18,916.00	18,916.00	18,916.00
14.8.2	FIRE HOSE : 2½" dia					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	Supply of fire hose of 2½" (63mm) dia 30 meter long with/ without hose rack frame & nipple suitable to install inside the hydrant cabinet. The hose shall conform to NFPA 1961/BS. The hose shall be UL listed / FM approved or LPCB/Kitemark certified. Working pressure & burst test pressure shall be not less than 200 psi & 600 psi respectively, shall be made with special quality EPDM rubber as internal lining, suitable to withstand heat and polluted water, heat and abrasion resistance. Jacketting shall be made up of 100% polyester for extra strength. Hose shall be 30 meter long in a single length and shall be with aluminium alloy body instantaneous male coupling in one end and other end with instantaneous female coupling. Color of the hose pipe shall be white/red. Coupling shall confirm to BS336 & comply with Fire service & civil defence department of Bangladesh.	Each	23,961.00	23,961.00	23,961.00	23,961.00
14.8.3	JET / SPRAY NOZZLE : 2½" dia Supply & installation of UL listed / FM approved or LPCB/ Kitemark certified Jet/ spray nozzle having 65mm dia with male instantaneous coupling or shall be connected to the female instantaneous coupling of 65mm hose pipe . The nozzle shall be operable in three modes: jet - spray - shut off. The nozzle shall be light weight and easy operable. Construction of the nozzle shall be of brass & Working pressure shall be not less than 100 psi. Test pressure shall be minimum 230 psi(16 bar) Flow Capacity of nozzle shall not be less than 250 GPM @ 100 psi. Nozzle shall be installed inside the cabinet.	Each	12,107.00	12,107.00	12,107.00	12,107.00
14.9	PILLAR HYDRANT PILLAR HYDRANT : DOUBLE HEADED Supply and installation of cast Iron body double headed pillar hydrant complete with 2 (two) nos. cast brass made controllable outlet of 65mm dia with female instantaneous outlet, Inlet shall be 100mm dia flanged end. It should be LPCB/ Kitemark certified. The hydrant shall be suitable to withstand test pressure of 300 psi (minimum). Color of the unit shall be red / approved by the manufacturer or as per code. Pillar hydrant Shall be BS standard& comply with Fire service & civil defence department of Bangladesh.	Each	17,655.00	17,655.00	17,655.00	17,655.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.10	STEEL CABINET Fabrication, supply & installation of hydrant cabinet of suitable size (as per site measurement and requirement / recommended by the Engineering to accommodate landing valve, hose, nozzle and coupling. The cabinet shall be with swing type door with or without breakable glass. The cabinet shall be made with 18 SWG sheet steel, powder coated of red color. Country of origin: Locally fabricated.					
14.10.1	Class - I cabinet (for 2.5" hose rack assembly)	Each	15,133.00	15,133.00	15,133.00	15,133.00
14.10.2	Class - II cabinet (for 1.5" hose rack assembly)	Each	15,133.00	15,133.00	15,133.00	15,133.00
14.10.3	Class - III cabinet (for 1.5" hose rack assembly & 2.5 hose angle valve/ landing valve)	Each	16,394.00	16,394.00	16,394.00	16,394.00
14.10.4	Outdoor hydrant box for pillar hydrant	Each	15,133.00	15,133.00	15,133.00	15,133.00
14.11	BLACK STEEL PIPE , 40 SCHEDULE: Supply and installation of ERW / seamless schedule 40 black steel pipe of API 5L/ASTM A53 standard . The pipe work shall be included with welded type tee, elbow, reducer etc. and also hangers / supports etc completed. Pipe work (over ground) shall be painted with red oxide primer. Underground pipes should be laid after wrapping with approved PVC tape. Pipe wall thickness shall be as per mentioned diameters.					
14.11.1	250 mm (10 inch) dia, wall thickness: 8.2mm	ft.	3,909.00	3,909.00	3,909.00	3,909.00
14.11.2	200 mm (8 inch) dia, wall thickness: 8.2mm	ft.	3,405.00	3,405.00	3,405.00	3,405.00
14.11.3	150 mm (6 inch) dia, wall thickness: 7.1mm	ft.	3,027.00	3,027.00	3,027.00	3,027.00
14.11.4	100 mm (4 inch) dia, wall thickness: 6.0mm	ft.	2,421.00	2,421.00	2,421.00	2,421.00
14.11.5	80mm (3 inch) dia, wall thickness: 5.5mm	ft.	1,766.00	1,766.00	1,766.00	1,766.00
14.11.6	65 mm (2½ inch) dia, wall thickness: 5.2mm	ft.	1,198.00	1,198.00	1,198.00	1,198.00
14.11.7	50 mm (2 inch) dia, wall thickness: 3.9mm	ft.	744.00	744.00	744.00	744.00
14.11.8	40 mm (1½ inch) dia, wall thickness: 3.7mm	ft.	624.00	624.00	624.00	624.00
14.11.9	32 mm (1.25 inch) dia, wall thickness: 3.6mm	ft.	517.00	517.00	517.00	517.00
14.11.10	25 mm (1inch) dia, wall thickness: 3.4mm	ft.	536.00	536.00	536.00	536.00
14.11.11	20 mm (¾ inch) dia, wall thickness: 2.9mm	ft.	372.00	372.00	372.00	372.00
14.11.12	12 mm (½ inch) dia, wall thickness: 2.8mm	ft.	240.00	240.00	240.00	240.00
14.12	SS PIPE :					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	Supply and Installation of Stainless Steel TP304/304L grade Pipe for Fire pumps pressure sensing line. The pipe work shall be included with welded type tee, elbow, reducer etc. Standard ASTM, ASME, DIN, EN, ISO, JIS..					
14.12.1	SS Pipe for Sensing line 20 mm (3/4 inch) dia,	ft.	486.00	486.00	486.00	486.00
14.12.2	SS Pipe for Sensing line 12 mm (1/2 inch) dia,	ft.	378.00	378.00	378.00	378.00
	VALVES & FITTINGS					
	GATE VALVES					
	Supply & installation of valves & fittings complies with ANSI, flange / groove type, temperature range: 0°C-80°C; working pressure: 300 PSI minimum, valve body as per ASTM A536, 65-45-12 standard, UL Listed / FM approved.					
14.13	OS & Y GATE VALVES					
14.13.1	250 mm (10 inch) dia,	Each	94,582.00	94,582.00	94,582.00	94,582.00
14.13.2	200 mm (8 inch) dia	Each	71,883.00	71,883.00	71,883.00	71,883.00
14.13.3	150 mm (6 inch) dia	Each	61,163.00	61,163.00	61,163.00	61,163.00
14.13.4	100 mm (4 inch) dia	Each	46,030.00	46,030.00	46,030.00	46,030.00
14.13.5	80 mm (3 inch) dia	Each	35,185.00	35,185.00	35,185.00	35,185.00
14.13.6	65 mm (2½ inch) dia	Each	25,222.00	25,222.00	25,222.00	25,222.00
14.13.7	50 mm (2 inch) dia	Each	22,700.00	22,700.00	22,700.00	22,700.00
			-	-	-	-
14.14	RESILIENT SWING CHECK VALVES :					
14.14.1	250 mm (10 inch) dia,	Each	100,888.00	100,888.00	100,888.00	100,888.00
14.14.2	200 mm (8 inch) dia	Each	72,513.00	72,513.00	72,513.00	72,513.00
14.14.3	150 mm (6 inch) dia	Each	52,966.00	52,966.00	52,966.00	52,966.00
14.14.4	100 mm (4 inch) dia	Each	44,138.00	44,138.00	44,138.00	44,138.00
14.14.5	65 mm (2½ inch) dia	Each	25,222.00	25,222.00	25,222.00	25,222.00
14.14.6	50 mm (2 inch) dia	Each	25,222.00	25,222.00	25,222.00	25,222.00
			-	-	-	-
14.15	Y-STRAINERS					
14.15.1	250 mm (10 inch) dia,	Each	94,582.00	94,582.00	94,582.00	94,582.00
14.15.2	200 mm (8 inch) dia	Each	61,668.00	61,668.00	61,668.00	61,668.00
14.15.3	150 mm (6 inch) dia	Each	50,444.00	50,444.00	50,444.00	50,444.00
14.15.4	65 mm (2½ inch) dia	Each	25,853.00	25,853.00	25,853.00	25,853.00
14.15.5	50 mm (2 inch) dia	Each	25,222.00	25,222.00	25,222.00	25,222.00
			-	-	-	-
14.16	FOOT VALVE WITH STRAINER					
			-	-	-	-

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.16.1	250 mm (10 inch) dia,	Each	88,277.00	88,277.00	88,277.00	88,277.00
14.16.2	200 mm (8 inch) dia	Each	61,668.00	61,668.00	61,668.00	61,668.00
14.16.3	150 mm (6 inch) dia	Each	32,789.00	32,789.00	32,789.00	32,789.00
14.16.4	65 mm (2½ inch) dia	Each	18,916.00	18,916.00	18,916.00	18,916.00
14.16.5	50 mm (2 inch) dia	Each	15,133.00	15,133.00	15,133.00	15,133.00
14.16.6	40 mm (1½ inch) dia	Each	12,611.00	12,611.00	12,611.00	12,611.00
14.17	ANTI VORTEX PLATE					
14.17.1	250 mm (10 inch) dia,	Each	63,055.00	63,055.00	63,055.00	63,055.00
14.17.2	200 mm (8 inch) dia	Each	50,444.00	50,444.00	50,444.00	50,444.00
14.17.3	150 mm (6 inch) dia	Each	37,833.00	37,833.00	37,833.00	37,833.00
14.17.4	65 mm (2½ inch) dia	Each	18,916.00	18,916.00	18,916.00	18,916.00
14.17.5	50 mm (2 inch) dia	Each	12,611.00	12,611.00	12,611.00	12,611.00
14.17.6	40 mm (1½ inch) dia	Each	10,089.00	10,089.00	10,089.00	10,089.00
14.18	FLEXIBLE JOINT : Supply & installation of flexible joint complies with ANSI, temperature range: 0°C-80°C ; working pressure: 200 PSI minimum, valve body as per ASTM A536, 65-45-12 standard, UL Listed / FM approved.					
14.18.1	250 mm (10 inch) dia,	Each	46,661.00	46,661.00	46,661.00	46,661.00
14.18.2	200 mm (8 inch) dia	Each	35,311.00	35,311.00	35,311.00	35,311.00
14.18.3	150 mm (6 inch) dia	Each	25,222.00	25,222.00	25,222.00	25,222.00
14.18.4	65 mm (2½ inch) dia	Each	12,611.00	12,611.00	12,611.00	12,611.00
14.18.5	50 mm (2 inch) dia	Each	10,089.00	10,089.00	10,089.00	10,089.00
14.19	BALL VALVES CLASS : PN16, Supply & installation of ball valves complies with ANSI, temperature range: 0°C-80°C ; working pressure: 200 PSI minimum, valve body as per ASTM A536, 65-45-12 standard, UL Listed / FM approved.					
14.19.1	65 mm (2½ inch) dia	Each	11,350.00	11,350.00	11,350.00	11,350.00
14.19.2	50 mm (2 inch) dia	Each	8,197.00	8,197.00	8,197.00	8,197.00
14.19.3	40 mm (1½ inch) dia	Each	3,783.00	3,783.00	3,783.00	3,783.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.19.4	25 mm (1inch) dia	Each	2,774.00	2,774.00	2,774.00	2,774.00
14.19.5	20 mm (¾ inch) dia	Each	1,829.00	1,829.00	1,829.00	1,829.00
14.19.6	12 mm (½ inch) dia	Each	984.00	984.00	984.00	984.00
14.20	PRESSURE GAUGE : Supply and installation of 3.5" - 4" dial type pressure gauges including supply of all accessories and consumable. The range shall be 0-300 psi, UL Listed / FM approved.	Each	6,305.00	6,305.00	6,305.00	6,305.00
14.21	PRESSURE SWITCH Supply, installation and testing of pressure switch complete with sensing element, enclosure material, 15 mm NPT pressure connection, direct mounting electrical connection, other material etc. accepted / approved by the Engineer. It shall be UL Listed / FM approved.	Each	18,916.00			
14.22	PRESSURE RELIEF VALVE Supply, installation and testing pressure relief valve to automatically relieve excess pressure in fire protection pumping systems. Valve body as per ASTM A536 65-45-12 and available pressure relief range 100-300 PSI. Inlet / outlet shall be flanged / threaded end type, UL Listed / FM approved.			18,916.00	18,916.00	18,916.00
14.22.1	150 mm (6 inch) dia	Each	258,525.00	258,525.00	258,525.00	258,525.00
14.22.2	100 mm (4 inch) dia	Each	220,692.00	220,692.00	220,692.00	220,692.00
14.22.3	80 mm (3.25 inch) dia	Each	126,110.00	126,110.00	126,110.00	126,110.00
14.23	WASTE CONE Supply & installation of flange type waste cone. Two sight glasses extending from the center of the waste cone allow users to observe the flow of water and ensure that the system's pumps and other components are working correctly. The size of the waste cone shall be selected as per main relief valve out line: UL Listed / FM approved.					
14.23.1	200 x 300 mm (8 x 10 inch) dia	Each	119,804.00	119,804.00	119,804.00	119,804.00
14.23.2	150 x 200 mm (6 x 8 inch) dia	Each	88,277.00	88,277.00	88,277.00	88,277.00
14.23.3	100 x 150 mm (4 x 6 inch) dia	Each	60,533.00	60,533.00	60,533.00	60,533.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.24	AUTO AIR-VENT VALVE Supply & installation of auto air vent valve of 1 inch (25mm) dia . The valve shall be suitable to release air from the fire hydrant pipes. Shall be suitable to withstand pressure up to 10kg/cm². It shall be UL Listed / FM approved.	Each	18,916.00	18,916.00	18,916.00	18,916.00
14.25	FLOW SWITCH Supply & installation of flow switch of leaf type suitable for installation of water hydrant pipe. The flow shall sense flow of water within pipe and send signal to water flow monitoring panel. Flow switch shall be under control of water flow supervisory panel to ensure the hydrant operation. Power supply shall be 24VDC. The flow switch shall be UL Listed / FM approved.					
14.25.1	200 mm dia	Each	26,483.00	26,483.00	26,483.00	26,483.00
14.25.2	150 mm dia	Each	26,483.00	26,483.00	26,483.00	26,483.00
14.25.3	100 mm dia	Each	25,222.00	25,222.00	25,222.00	25,222.00
14.25.4	80 mm dia	Each	18,916.00	18,916.00	18,916.00	18,916.00
14.25.5	65 mm dia	Each	18,916.00	18,916.00	18,916.00	18,916.00
14.25.6	50 mm dia	Each	15,133.00	15,133.00	15,133.00	15,133.00
14.26	PRESSURE REDUCING VALVE : 40mm dia Supply & installation of pressure reducing valve of 1½" (40mm) dia, brass body, screwed end type, shall be used with 40mm dia internal hydrant unit (where to reduce high pressure is necessary). Valve body shall be made with hot pressed brass, seat of stainless steel ANSI304 shall be suitable for 80°C. Initial pressure shall be 15 bar, adjustable final pressure shall be 0.5bar (min), 7bar (max),UL Listed / FM approved .	Each	17,655.00	17,655.00	17,655.00	17,655.00
14.27	SPRINKLER HEAD Supply & installation of sprinkler head of 1/2" in diameter nominal orifice, K-factor 5.6 chrome finish glass bulb type. Temperature rating 68°C for general area others area shall be specified as per requirement. Sprinkler head shall be UL Listed / FM approved or Installation shall be as per NFPA 13.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.27.1	Pendent type (with escutcheon / rochette plate)	Each	2,144.00	2,144.00	2,144.00	2,144.00
14.27.2	Up-right type	Each	1,955.00	1,955.00	1,955.00	1,955.00
14.27.3	Side wall type (with escutcheon / rochette plate)	Each	2,396.00	2,396.00	2,396.00	2,396.00
14.28	SPRINKLAR ALARM CHECK VALVE Supply & installation of sprinkler alarm check valve (wet riser type) The valve shall be actuated by breaking of sprinklar glass bulb. The valve shall be UL Listed / FM approved .					
14.28.1	8" alarm check valve	Each	176,554.00	176,554.00	176,554.00	176,554.00
14.28.2	6" alarm check valve	Each	126,110.00	126,110.00	126,110.00	126,110.00
14.28.3	4" alarm check valve	Each	44,138.00	44,138.00	44,138.00	44,138.00
14.29	PRESSURE REDUCING VALVE FOR SPRINKLER Supply & installation of Pressure Reducing Valve to limit the pressure below the working pressure of Sprinkler , UL Listed / FM approved.					
14.29.1	8" Pressure Reducing Valve	Each	277,442.00	277,442.00	277,442.00	277,442.00
14.29.2	6" Pressure Reducing Valve	Each	208,081.00	208,081.00	208,081.00	208,081.00
14.29.3	4" Pressure Reducing Valve	Each	151,332.00	151,332.00	151,332.00	151,332.00
14.30	ZONE CONTROL VALVE Supply & installation of zone control valve to get the notification of water flow from any fire zone on a combination of butterfly valve with tamper switch, flow switch, pressure gauge and test & drain valves. All accessories shall be UL Listed / FM approved.					
14.30.1	6" zone control valve set	Each	90,799.00	90,799.00	90,799.00	90,799.00
14.30.2	4" zone control valve set	Each	84,494.00	84,494.00	84,494.00	84,494.00
14.30.3	3" zone control valve set	Each	71,883.00	71,883.00	71,883.00	71,883.00
14.30.4	2.5" zone control valve set	Each	63,055.00	63,055.00	63,055.00	63,055.00
14.31	FLOW METER Supply & installation of Grooved / Flanged end type flow meter to measure the amount of liquid passing through the venturi of the flow meter in order to measure the performance of Pump. Range shall be minimum 0 -2500 GPM . It shall be UL Listed / FM approved .					
		Each	201,776.00	201,776.00	201,776.00	201,776.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.32	TEMPER SWITCH Supply & installation of Temper Switch to monitor the open position OS&Y type gate valve as per NFPA 20. The temper switch shall be mounted conveniently to OS&Y Gate Valves ranging in size from 2"- 8", UL Listed / FM approved. Temper Switch for 2"- 8" OS&Y Gate Valve	Each	18,916.00	18,916.00	18,916.00	18,916.00
14.33	GAS SUPPRESSION SYSTEM GAS CYLINDER WITH CLEAN AGENT GAS Supply & fixing UL/FM approved seamless cylinder with FK-5-1-12/HFC-227ea clean agent gas for gas suppression system, complete with pressure gauge, valve assembly and necessary accessories with a safety burst disc and a safety cap etc in conformity with NFPA 2001. Cylinder shall be seamless steel type manufactured from billets & tested. The cylinder/valve assembly shall have suitable metallic protection for the valve enabling transportation cylinders safely. The cylinder shall be super-pressurized with dry Nitrogen to 25 bar. The cylinder shall be capable of withstanding any temperature between -30° C & 70°C. All cylinders shall be distinctly & permanently marked with the quantity of agent contained, the empty cylinder weight, the pressurization pressure & the zones they are protecting. Storage pressure: 25 bar; Test pressure: From 150bar to 300 bar . Cylinder should include Syphon tube and Support base/ Strap, complete with Valve Assembly and pressure gauge.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	The valve assembly shall be mounted directly on the cylinder & should NOT have any adapter provision between the cylinder & valve as per requirements. Each cylinder valve shall have a provision for fixing a supervisory pressure switch & a safety burst disc to protect the cylinder from over pressure. The cylinder valve shall have a disabling plug to prevent accidental discharge of the valve during transportation & installation. Each Valve is to be fitted with a pressure gauge for monitoring loss of pressure. The master cylinder valve is to be released electrically which is performed by means of a solenoid valve arrangement. Pilot cylinder actuation & pneumatic devices shall be used only for Slave Cylinder. The Clean agent gas is stored in seamless steel cylinders & dry nitrogen is added to provide additional energy to give the required rapid discharge. Purity (%) of Clean Agent : 99.99, Applicable Fire Class: Class A, B & C fires. Pressure range : 25 bar; Clean agent gas should be UL Listed/ FM Approved .					
14.33.1	20 Liter capacity.	Each	390,941.00	390,941.00	390,941.00	390,941.00
14.33.2	30 Liter capacity.	Each	416,163.00	416,163.00	416,163.00	416,163.00
14.33.3	50 Liter capacity.	Each	599,022.00	599,022.00	599,022.00	599,022.00
14.33.4	80 Liter capacity.	Each	807,103.00	807,103.00	807,103.00	807,103.00
14.33.5	100 Liter capacity.	Each	1,008,879.00	1,008,879.00	1,008,879.00	1,008,879.00
14.33.6	120 Liter capacity.	Each	1,152,644.00	1,152,644.00	1,152,644.00	1,152,644.00
14.33.7	140 Liter capacity.	Each	1,298,931.00	1,298,931.00	1,298,931.00	1,298,931.00
	<i>NB: Procuring entity shall mention only one type of clean agent gas (either FK-5-1-12 or HFC-227ea) based on design consideration.</i>					
14.34	CLEAN AGENT GAS (REFILLING)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	Supply of FK-5-1-12/ HFC-227ea Clean agent gas suitable for storing in seamless steel cylinders & dry nitrogen is added to provide additional energy to give the required rapid discharge. Purity (%) of Clean Agent : 99.99, Applicable Fire Class: Class A, B & C fires. Pressure range :25 bar; Clean agent gas should be UL Listed/ FM Approved . <i>NB: Procuring entity shall mention only one type of clean agent gas (either FK-5-1-12 or HFC-227ea) based on design consideration.</i>	KG	6,936.00	6,936.00	6,936.00	6,936.00
14.35	NOZZLE Supply & fixing the discharge nozzles are designed to provide the proper flow rate and distribution of clean agent Gas to total floor of hazardous area. It should be UL Listed/ FM Approved.					
14.35.1	12.5 mm dia (1/2 Inch)360°	Each	1,892.00	1,892.00	1,892.00	1,892.00
14.35.2	19 mm dia (3/4 Inch)360°	Each	2,270.00	2,270.00	2,270.00	2,270.00
14.35.3	25 mm dia (1 Inch),360°	Each	3,153.00	3,153.00	3,153.00	3,153.00
14.35.4	32 mm dia (1 1/4 Inch)360°	Each	3,531.00	3,531.00	3,531.00	3,531.00
14.35.5	40 mm dia (1 1/2 Inch)360°	Each	3,783.00	3,783.00	3,783.00	3,783.00
14.35.6	50 mm dia (2 Inch) 360°	Each	5,675.00	5,675.00	5,675.00	5,675.00
14.35.7	80 mm dia (3 Inch) 360°	Each	7,567.00	7,567.00	7,567.00	7,567.00
14.35.8	25 mm dia (1 Inch),180°	Each	2,522.00	2,522.00	2,522.00	2,522.00
14.35.9	50 mm dia (2 Inch) 180°	Each	4,414.00	4,414.00	4,414.00	4,414.00
14.36	RELEASE CONTROL PANEL Providing & fixing Release control panel for gas suppression system complete with battery and all other necessary accessories. Each unit shall be UL Listed/ FM Approved .					
14.36.1	2 Zone	Each	94,582.00	94,582.00	94,582.00	94,582.00
14.36.2	4 zone	Each	126,110.00	122,705.00	122,705.00	122,705.00
14.37	ABORT SWITCH					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	Supply and installation of Abort Switch used to momentarily interrupt the release circuit signal when the control unit is in the alarm condition. As long as the abort pushbutton is held in, the fire suppression system will not release. It should be UL Listed/ FM Approved.	Each	10,719.00	10,719.00	10,719.00	10,719.00
14.38	MANUAL RELEASE SWITCH Supply & installation of manual release switch with all necessary accessories. It should be UL Listed/ FM Approved.	Each	10,719.00	10,719.00	10,719.00	10,719.00
14.39	MANIFOLD CHECK VALVE Supply & installation of 2" Manifold Check Valve installed at the discharge manifold. It should be UL Listed/ FM Approved.	Each	19,547.00	19,547.00	19,547.00	19,547.00
14.40	DISCHARGE HOSE Supply & installation of Discharge Hose 2" of minimum 3 meter long. It should be UL Listed/ FM Approved.	Each	18,286.00	18,286.00	18,286.00	18,286.00
14.41	MASTER CYLINDER ADAPTER KIT Supply & installation of Master Cylinder Adapter Kit to actuate the Slave Cylinder. It should be UL Listed/ FM Approved.	Each	3,783.00	3,783.00	3,783.00	3,783.00
14.42	PILOT HOSE/ FLEXIBLE ACTUATION HOSE Supply & installation of Pilot Hose/ Flexible Actuation Hose of minimum 3 meter long (Minimum dia of actuation hose 1/4" or as per manufacturer recommendation). It should be UL Listed/ FM Approved.	Each	4,414.00	4,414.00	4,414.00	4,414.00
14.43	MANIFOLD SUPERVISORY SWITCH/ MONITOR SUPERVISORY SWITCH Supply & installation of Manifold Supervisory Switch/ Monitor Supervisory Switch. It should be UL Listed/ FM Approved.	Each	15,133.00	15,133.00	15,133.00	15,133.00
14.44	PNEUMATIC RELEASE DEVICE / PRESSURE OPERATED CONTROL HEAD (FOR SLAVE CYLINDER)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	Supply & installation of Pneumatic Release Device / Pressure Operated Control Head which allows for pressure actuation slave cylinders and is mounted directly on top of the slave cylinders valve. It should be UL Listed/ FM Approved.	Each	20,808.00	20,808.00	20,808.00	20,808.00
14.45	ELECTRO MAGNETIC RELEASE DEVICE OR ELECTRIC CONTROL (FOR MASTER CYLINDER) Supply & installation of Electro Magnetic Release Device or Electric Control Head operated electrically from the Detection & Control System or locally with a manual lever on the control head. It should be UL Listed/ FM Approved.	Each	31,527.00	31,527.00	31,527.00	31,527.00
14.46	TWIN FLASHING LIGHT Supply and installation of UL Listed/ FM Approved Twin Flashing Light.	Each	8,828.00	8,828.00	8,828.00	8,828.00
14.47	<u>BALANCING, TESTING & COMMISSIONING OF FIRE HYDRANT SYSTEM.</u>					
14.47.1	For level : 1 to 6	Each	31,527.00	30,124.00	28,038.00	28,038.00
14.47.2	For next floor add	Each	6,305.00	6,025.00	5,608.00	5,608.00
14.48	<u>CONVENTIONAL TYPE FIRE DETECTION & ALARM SYSTEM</u> CONVENTIONAL FIRE ALARM CONTROL PANELS : Supply and installation of conventional fire alarm control panel of following capacity with power supply unit, batteries and other accessories. The panel shall be complete with zone indicating LED, fault indication and optional telephone jack etc. The panel shall have input 220V AC and output 24V DC. Panel shall be confirmed UL listed / FM approved.					
14.48.1	08 zone capacity	Each	88,970.00	88,970.00	88,970.00	88,970.00
14.48.2	16 zone capacity	Each	99,438.00	99,438.00	99,438.00	99,438.00
14.48.3	24 zone capacity	Each	123,588.00	123,588.00	123,588.00	123,588.00
14.49	INITIATING DEVICES SMOKE DETECTOR (CONVENTIONAL TYPE)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	Supply and installation of conventional smoke detector complete with base. Shall be UL listed / FM approved. Shall have built-in alarm LED. Power supply shall be 24VDC.	Each	3,349.00	3,349.00	3,349.00	3,349.00
14.50	HEAT DETECTOR (CONVENTIONAL TYPE)					
	Supply and installation of conventional heat detector complete with base. Shall be UL listed / FM approved. Shall have built-in alarm LED. Power supply shall be 24VDC.	Each	3,349.00	3,349.00	3,349.00	3,349.00
14.51	MANUAL CALL POINT					
	Supply and installation of conventional type manual call point like break glass switch or single action pull station complete with back box and all other accessories and consumables. Power supply shall be 24V DC. It shall be UL listed / FM approved .	Each	3,559.00	3,559.00	3,559.00	3,559.00
14.52	NOTIFICATION DEVICES					
14.52.1	FIRE ALARM BELL					
	Supply and installation of conventional type fire alarm bell of 150mm dia , red color, shall be UL listed / FM approved . Power supply shall be 24VDC. Sound level shall be not less than 92 dBA @ 3meter. Color of the bell shall be red.	Each	4,414.00	4,414.00	4,414.00	4,414.00
14.52.2	HORN					
	Supply and installation of conventional type horn for notification purpose suitable to produce electronic sound level of 87 to 95 dBA @ 3 meter complete with back box, red color, shall be UL listed / FM approved . Power supply shall be 24VDC. Color of the device shall be red.	Each	4,414.00	4,414.00	4,414.00	4,414.00
14.52.3	HORN WITH STROBE					
	Supply and installation of conventional type horn with strobe for notification purpose complete with back box, suitable to produce electronic sound level of 87 to 95 dBA @ 3 meter and illumination shall be not less than 75 candela red color shall be UL listed / FM approved . Power supply shall be 24VDC.		5,044.00	5,044.00	5,044.00	5,044.00
14.53	Balancing, testing & commissioning of fire detection & alarm system by the competent engineer, technical personnel and provide training to the PWD personnel to operate the sytem perfectly and safely.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.53.1	For 8 zone	Each	31,527.00	30959	28815	28815
14.53.2	For 16 zone	Each	63,055.00	61919	57631	57631
14.53.3	For 24 zone	Each	94,582.00	92878	86446	86446

14.54 ADDRESSABLE TYPE FIRE DETECTION & ALARM SYSTEM

ADDRESSABLE TYPE FIRE ALARM CONTROL PANEL

Supply & installation of addressable type fire alarm control panel complete with following basic options. Master controller assembly / CPU shall be suitable with port to add voice alarm system / fire fighter telephone system / Printer / remote annunciator etc. FACP must be comply with internationally accepted standard.

Addressable fire alarm control panel shall be complete, non-coded, addressable, microprocessor based with the ability to communicating with initiating devices, notification appliances, and monitoring and control devices.

Annunciation : Operation of alarm and supervisory initiating devices shall be annunciated at the FACP indicating the location and type of device.

Environmental compensation : The FACP shall maintain a moving average of the sensor's smoke chamber value to automatically compensate for dust, dirt, and other conditions that could affect detection operations or shall maintain the dust status of the detector.

Programmable sensitivity : Sensitivity of the detector shall be adjusted if needed.

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	The FACP shall be provided with sufficient battery capacity to operate the entire system upon loss of normal AC power in a normal supervisory mode for a period of 24 hours with 5 minutes of alarm operation at the end of this period. The system shall automatically transfer to battery standby upon power failure. All battery charging and recharging operations shall be automatic. Battery : Sealed lead-acid. Provide sufficient capacity to operate the complete alarm system in normal or supervisory (non-alarm) mode for a period of 24 hours. Following this period of operation on battery power, the battery shall have sufficient capacity to operate all components of the system, including all alarm indicating devices in alarm or supervisory mode for a period of 5 minutes. Power supply (input power) shall be 240VAC. All circuits requiring system-operating power shall be 24 VDC and shall be individually fused at the control unit. The incoming power to the system shall be supervised so that any power failure will be indicated at the control unit. A dedicated LED shall be displayed continuously while incoming power is present. In the absence of main power, LED will change its status. The system batteries shall be supervised so that a low battery or depleted battery condition or disconnection of the battery shall be indicated at the control unit and displayed for the specific fault type. The system shall support 100% of addressable devices in alarm or operated at the same time, under both primary (AC) and secondary (battery) power conditions. Loss of primary power shall sound a trouble signal at the FACP. FACP shall indicate when the system is operating on an alternate power supply. Product data sheets for system components highlighted to indicate the specific products, features, or functions required to meet this specification. Alternate or as-equal products submitted under this contract must provide a detailed line-by-line comparison of how the submitted product meets, exceeds, or does not comply with this specification.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	Wiring diagrams, Shop drawings showing system details including location of FACP, all devices, circuiting and details of graphic annunciator. System power and battery charts with performance graphs and voltage drop calculations to assure that the system will operate as per the prescribed backup time periods and under all voltage conditions as per UL and NFPA standards. System operation description including method of operation and supervision of each type of circuit and sequence of operations for all manually and automatically initiated system inputs and outputs. A list of all input and output points in the system shall be provided with a label indicating location or use of IDC, NAC, relay, sensor, and auxiliary control circuits. Alarm silence, system reset and priority to reset global and individual point acknowledge. Set system time and date and clear event log, individual point access for control or parameter revisions. Cabinet shall be lockable steel enclosure. Arrange unit so all operations required for testing or for normal care and maintenance of the system are performed from the front of the enclosure. If more than a single unit is required to form a complete control unit, provide exactly matching modular unit enclosures. Operation and maintenance data for inclusion in operating and maintenance manual. Include data for each type product, including all features and operating sequences, both automatic and manual. Provide the names, addresses, and telephone numbers of service organizations. Operating ambient temperature range: 0° to 45°C (minimum) Operating humidity range: Up to 93% RH, non-condensing @ 90° F (32° C) minimum Approvals: UL listed / FM approved .					
14.54.1	FACP (Fire alarm control panel) up to 150 devices	Each	346,802.00	346,802.00	346,802.00	346,802.00
14.54.2	FACP 151-250 devices	Each	403,552.00	403,552.00	403,552.00	403,552.00
14.54.3	FACP 251-500 devices	Each	504,439.00	504,439.00	504,439.00	504,439.00
14.54.4	FACP 501-750 devices	Each	580,105.00	580,105.00	580,105.00	580,105.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.54.5	FACP 751-1000 devices	Each	693,604.00	693,604.00	693,604.00	693,604.00
14.54.6	FACP 1001-1500 devices	Each	819,714.00	819,714.00	819,714.00	819,714.00
14.54.7	FACP 1501-2000 devices	Each	1,008,879.00	981,639.00	981,639.00	981,639.00
14.55	REPEATER PANEL / REMOTE ANNUNCIATOR Supply & installation of repeater panel / remote LCD annunciator with the same "look and feel" as the FACP operator interface. The remote LCD annunciator shall use the same primary acknowledge, silence, and reset keys, status LEDs and LCD display as the FACP. Annunciator shall have super-twist LCD display with two lines of 20 characters each (Minimum). Annunciator shall be provided with programmable control switches and associated LEDs. Under normal conditions the LCD shall display a "SYSTEM IS NORMAL" or equivalent message or indicate normal status without trouble as per manufacturer design. It Should be capable of detecting an abnormal condition and in this case, the appropriate LED (alarm, supervisory or trouble) shall flash. The unit audible signal shall pulse for alarm conditions and sound steady for trouble and supervisory conditions. The LCD shall display the following information relative to the abnormal condition of a point in the system: Operator keys shall be the key switch enabled to prevent unauthorized use. The key shall only be removable in the disabled position. Acknowledge, silence and reset operation shall be the same as the FACP. Voltage: 20 to 32 VDC, system supplied Operating ambient temperature range shall be : 0° to 45°C(Minimum) Operating humidity range: 0% to 93% RH Non Condensing (Minimum) The panel shall be fixed on wall with surface mount box. Approvals: UL listed / FM approved .	Each	126,110.00	126,110.00	126,110.00	126,110.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.56	CENTRAL MONITORING AND CONTROL STATION (AS AND WHEN REQUIRED): Supply & installation of software based total monitoring and control in a single point of workstation (PC based) over a single network system. The intuitive interface displays building floor plans and includes clear, concise instructions on what actions must be taken for both fire and non-fire events, customizable screens and multiple configuration option to facilitate set up, minimize operator training and allow you to adapt the system to your needs. When responding to an event, a coordinated response can save lives and preserve property. The system broadcasts encrypted, real-time voice instructions to a single facility or to multiple locations worldwide using an IP network connection. The system should provide be the following facilities: Supports digital alarm communicator receiver interface for monitoring of Graphic editing mode allows for on-site or off-site programming of floor plan screens, devices and navigational buttons. Redundant hard drives for enhanced survivability. Email notification. Windows based platform. Certification: UL listed / FM approved .	Each	693,604.00	693,604.00	693,604.00	693,604.00
14.57	ADDRESSABLE MULTI DETECTOR / MULTI SENSORS Supply & installation of addressable multi-sensors, shall include with photoelectric / Optical smoke sensing and heat sensing technologies complete with standard base. An alarm shall be determined by either smoke detection, with selectable sensitivity or heat detection, selectable as fixed temperature or fixed with selectable rate-of-rise; or based on an analysis of the combination of smoke and heat activity as per NFPA 72. The detector shall be self-restoring; detectors do not require resetting or readjustment after actuation to restore normal operation.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	No special tools shall be required to remove head once it has been connected with base. Removal of the detector head shall cause a trouble signal at the control unit. Except false ceiling, detector base shall be fixed with gang box in any other ceiling as per manufacturer instruction. In alarm condition, the sensor LED shall be on steady or have Bicolor (green/red) status LED Each sensor shall be scanned by the Control Unit for its type identification to prevent inadvertent substitution of another sensor type. Upon detection of a wrong / unprogrammed device, the control unit shall operate with the installed device at the default alarm settings for that sensor but shall indicate a unprogrammed device trouble condition. Detector shall have at least Two level of dirty detector warning. Detector Shall have non volatile memory to store the data of Sensitivity values, troubles, etc. Detector shall have listed spacing capacity of minimum 30 feet. Operating ambient temperature range shall be : 0° to 45°C(Minimum) Shall be suitable for humidity range: 0% to 93% RH Non Condensing (Minimum) Housing color shall be frost white. Approvals : UL listed / FM approved .					
14.58	ADDRESSABLE TYPE PHOTOELECTRIC SMOKE DETECTOR Supply & installation of addressable type photoelectric / Optical smoke The detector shall be self-restoring: detectors do not require resetting or readjustment after actuation to restore normal operation. No special tools shall be required to remove head once it has been connected with base. Removal of the detector head shall cause a trouble signal at the control unit. Except false ceiling, detector base shall be fixed with gang box in any other ceiling as per manufacturer instruction. In alarm condition, the sensor LED shall be on steady or have Bicolor (green/red) status LED	Each	8,197.00	8,197.00	8,197.00	8,197.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	Each sensor shall be scanned by the Control Unit for its type identification to prevent inadvertent substitution of another sensor type. Upon detection of a wrong / unprogrammed device, the control unit shall operate with the installed device at the default alarm settings for that sensor but shall indicate a unprogrammed device trouble condition. Detector shall have listed Spacing Capacity of 30 Feet. Detector shall have at least Two level of dirty detector warning. Detector shall have non volatile memory to store the data of Sensitivity values, troubles, etc. Detector having a unique identification shall communicate status to the FACP. Detector shall have at least two sensitivity settings. Removal of the sensor head for cleaning shall not require the setting of addresses. Operating ambient temperature range shall be minimum: 0° to 45°C(Minimum) Shall be suitable for humidity range: 10% to 95% RH Housing color shall be Frost White or equivalent. Smoke sensor ambient ratings : Air velocity(Minimum) 0-2000 ft/min (0-610 m/min) Approvals : UL listed / FM approved	Each	6,305.00	6,305.00	6,305.00	6,305.00
14.59	ADDRESSABLE TYPE HEAT DETECTOR: Supply & installation of addressable type heat detector with the combination of fixed-temperature and rate-of-rise heat detection. The detector shall be self-restoring: detectors do not require resetting or readjustment after actuation to restore normal operation. No special tools shall be required to remove head once it has been connected with base. Removal of the detector head shall cause a trouble signal at the control unit. Except false ceiling, detector base shall be fixed with gang box in any other ceiling as per manufacturer instruction. In alarm condition, the sensor LED shall be on steady or have Bicolor (green/red) status LED Detector shall have listed Spacing Capacity of 50 Feet.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.60	The heat sensors of fixed temperature sensing shall be independent of rate-of-rise sensing and programmable to operate at 130°F or 140°F (Minimum). Sensor rate-of-rise temperature detection shall be selectable at the FACP for 15° F per minute (Minimum). Detector having a unique identification shall communicate status to the FACP. Removal of the sensor head for cleaning shall not require the setting of addresses. Detector shall have non volatile memory to store the data of Sensitivity values, troubles, etc. Operating ambient temperature range shall be : 0° to 45°C(Minimum) Shall be suitable for humidity range: 0% to 93% RH Non Condensing (Minimum) Housing color shall be frost white. Approvals: UL listed / FM approved ADDRESSABLE MANUAL PULL STATION (MPS) Supply & installation of addressable type manual call station of red color. Station will mechanically latch upon operation and remain so until manually reset by opening with a key common with the control units. Shall be with compact construction, suitable to electronics module enclosure minimizes dust infiltration. Allows mounting in standard electrical boxes. Screw terminals for wiring connections. Activation of the MPS will required a firm downward pull to activate the alarm switch. The pull lever latches into the alarm position and remains extended out of the housing to provide a visible indication. Operating ambient temperature range shall be : 0° to 45°C(Minimum) Humidity range: 93% RH(minimum) at 100°F (38°C) Housing color shall be red with white raised lettering. Housing and pull lever shall be made with lexan polycarbonate or equal. The MPS shall be semi-flash / surface mount type. Approvals: UL listed/FM approved.	Each	5,675.00	5,675.00	5,675.00	5,675.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.60.1	Addressable manual pull station : Single action	Each	7,567.00	7,567.00	7,567.00	7,567.00
14.60.2	Addressable manual pull station : Double action	Each	10,089.00	10,089.00	10,089.00	10,089.00
14.61	ADDRESSABLE NOTIFICATION DEVICES					
14.61.1	ADDRESSABLE NOTIFICATION DEVICE (HORN ONLY) : Supply & installation of addressable type audible horn for notification purpose shall contain an electronic module and a selectable address setting. The device shall be suitable to program the high / low setting of the audible (horn) appliances. The horn shall be red color with / without "FIRE" lettering. Addressable horn shall be UL listed / FM approved . The horn shall be suitable to produce sound pressure level of 89 dBA @ 24VDC at low level as per NFPA Standard. The horn shall suitable to mount directly to a standard single gang, double gang or 4" square electrical box, without the use of special adapter or trim rings. Shall have suitable operating ambient temperature range : 0° to 45°C (Minimum) Humidity range: Minimum 93% RH at 100°F (38°C) Approvals : UL listed / FM approved.	Each	5,675.00	5,675.00	5,675.00	5,675.00
14.61.2	ADDRESSABLE NOTIFICATION DEVICE (STROBE ONLY) Supply & installation of addressable type notification device for visual notification purpose . It shall contain an electronic module and a selectable address setting. The strobe shall be red color with / without "FIRE" lettering. The Strobe shall be selectable at 15, 30, 75, or 110 cd Shall have suitable operating temperature range : 0° to 45°C (Minimum) Humidity range: Minimum 93% RH at 100°F (38°C) Approvals : UL listed / FM approved.	Each	6,305.00	6,305.00	6,305.00	6,305.00
14.61.3	ADDRESSABLE NOTIFICATION DEVICE (HORN WITH STROBE) Supply & installation of addressable type audible horn with strobe for notification purpose shall contain an electronic module and a selectable address setting.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	The device shall be suitable to program the high / low setting of the audible (horn) appliances. The horn shall be red color with / without "FIRE" lettering. Addressable horn shall be UL listed / FM approved . The horn shall be suitable to produce sound pressure level of 89 dBA @ 24VDC at low level as per NFPA Standard. The horn shall suitable to mount directly to a standard single gang, double gang or 4" square electrical box, without the use of special adapter or trim rings. Shall have suitable operating ambient temperature range : 0° to 45°C (Minimum) Humidity range: Minimum 93% RH at 100°F (38°C) Approvals : UL listed / FM approved. The Strobe shall be selectable at 15, 30, 75, or 110 cd	Each	8,197.00	8,197.00	8,197.00	8,197.00
14.62	ADDRESSABLE MODULES ISOLATOR MODULE / FAULT ISOLATOR MODULE Supply & installation of addressable type isolator / fault Isolator module, shall be used in the field wiring between the devices to detect & isolate the devices at the time short circuit in SLC. The module shall be suitable to provide communications isolation to improve installation convenience and increase the system integrity. Isolation will be automatically activated when an output short circuit is detected (also be suitable for manual operation for isolation and trouble shooting for wiring problems). The device shall be suitable for indoor use only. Shall have suitable operating ambient temperature range : 0° to 45°C (Minimum) Humidity range: Minimum 93% RH at 100°F (38°C) Approvals : UL listed / FM approved.	Each	6,305.00	6,305.00	6,305.00	6,305.00
14.63	ADDRESSABLE-CONVENTIONAL INTERFACE MODULE Supply & installation of addressable - conventional interface module shall be used in the field wiring to connect the conventional Initiating devices with the addressable FACP interfaces to make the system convenient as when as required (configured by the service provider). The module shall be suitable for single address to the FACP on receiving signal from any conventional initiating device. The device shall be suitable for indoor use only.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	Shall have suitable operating ambient temperature range : 0° to 45°C (Minimum) Humidity range: Minimum 93% RH at 100°F (38°C) Approvals : UL listed / FM approved.	Each	7,567.00	7,567.00	7,567.00	7,567.00
14.64	ADDRESSABLE RELAY / CONTROL MODULE Supply & installation of addressable relay / control module shall be used to interfaces with control / operate dampers, motors or similar appliances on receiving signal from the FACP as when as required (configured by the service provider). The device shall be suitable for indoor use only and shall be with back box. Shall have suitable operating ambient temperature range : 0° to 45°C (Minimum) Humidity range: Minimum 93% RH at 100°F (38°C) Approvals : UL listed / FM approved.	Each	6,558.00	6,558.00	6,558.00	6,558.00
14.65	ADDRESSABLE INPUT/MONITOR MODULE Supply & installation of addressable input / Monitor module shall be used to monitor the status of the required appliances as per NFPA and send signal to the FACP as when as required (configured by the service provider). The device shall be suitable for indoor use only and shall be with back box. Shall have suitable operating ambient temperature range : 0° to 45°C (Minimum) Humidity range: Minimum 93% RH at 100°F (38°C) Approvals : UL listed / FM approved.	Each	7,062.00	7,062.00	7,062.00	7,062.00
14.66	ADDRESSABLE INPUT SIGNAL MODULE Supply & installation of addressable input signal module for connecting supervised 24VDC audible/visible signal circuits, audio evacuation and telephone circuits to their power inputs as per NFPA and communicating with the FACP as when as required (configured by the service provider). The device shall be suitable for indoor use only and shall be with back box.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.67	Shall have suitable operating ambient temperature range : 0° to 45°C (Minimum) Humidity range: Minimum 93% RH at 100°F (38°C) Approvals : UL listed / FM approved. TELEPHONE JACK Supply & installation of Telephone Jack for two way communication or Fire Telephone system shall be integrated with FACP using addressable input signal module. The telephone jack shall be semi-flash / surface mount type and use Gang box or Back box. The portable telephone can be configured to provide either Three-state or Four state as per NFPA. The device shall be suitable for indoor use only and shall be with back box. Shall have suitable operating ambient temperature range : 0° to 45°C (Minimum) Humidity range: Minimum 93% RH at 100°F (38°C) Approvals : UL listed / FM approved.	Each	7,567.00	7,567.00	7,567.00	7,567.00
14.68	PORTABLE TELEPHONE HANDSET Supply & installation of portable Telephone Hand set. Portable telephone handset is an emergency telephone that provides two-way communication during a fire. Color of the telephone handset shall be Black/Red. Shall have suitable operating ambient temperature range : 0° to 45°C (Minimum) Humidity range: Minimum 93% RH at 100°F (38°C) Approvals : UL listed / FM approved.	Each	3,783.00	3,783.00	3,783.00	3,783.00
14.69	FIREFIGHTER TELEPHONE CONTROL UNIT	Each	7,567.00	7,567.00	7,567.00	7,567.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	Supply & installation of portable Telephone Hand set. Portable telephone handset is an emergency telephone that provides two-way communication during a fire. Fire Telephone unit contains the master telephone handset that provides an analog telephone riser for two-way communications between the fire command station and firefighter's telephone stations installed in the facility. The Fire telephone unit features an alphanumeric display that indicates both incoming and connected calls. Up to five remote telephones may be connected to the riser simultaneously. The fire command center operator can also use the telephone circuit as a page source, permitting paging via the telephone system. Shall have suitable operating ambient temperature range : 0° to 45°C (Minimum) Humidity range: Minimum 93% RH at 90°F (32°C) Approvals : UL listed / FM approved.	Each	151,332.00	151,332.00	151,332.00	151,332.00
14.70	REMOTE BOOSTER POWER SUPPLY Supply & installation of Remote Booster Power designed to augment fire alarm audible and visual power requirements as well as provide power for auxiliary and security applications as per NFPA 72. The Remote Booster Power Supply is a self-contained 24 Vdc power supply. The booster contains all of the necessary circuits to monitor and charge batteries, control and supervise Two Class B or One Class A NAC circuits (Minimum) and monitor two controlling inputs from external sources. Minimum Capacity of remote Booster power shall be not less than 6A. It shall have suitable operating ambient temperature range : 0° to 45°C (Minimum) Humidity range: Minimum 93% RH Non Condensing Approvals : UL listed / FM approved.	Each	138,721.00	138,721.00	138,721.00	138,721.00
14.71	DUCT DETECTOR					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	Supply & installation of Duct Detector to install inside the supply or return air duct as per NFPA 72. Sampling tube can be installed with or without the cover in place and can be rotated in 45-degree increments to ensure proper alignment with duct airflow. Shall have facility of remote Test Station for each detector. Shall have environmental compensation with differential sensing for reliable, stable, and drift-free sensitivity Shall have operating ambient temperature range from -15°C to 60°C with 100 ft/min. to 3500 ft/min air velocity rating which assures reliability under harsh environmental conditions. Approvals : UL listed / FM approved.	Each	22,069.00	22,069.00	22,069.00	22,069.00
14.72	ADDRESSABLE BEAM DETECTOR(FOR 25 FT AND ABOVE HEIGHT): Supply & installation of addressable Beam Detector with Reflector which is uniquely suited for protecting open areas with high ceiling, where other methods of smoke detection are difficult to install and maintain. It is to be used with compatible control panes only and maintenance and test requirements of NFPA 72. The beam detector consists of transmitter / receiver unit and reflector. when smoke enters the area between the unit and the reflector, the smoke causes a reduction in the signal. when the smoke level reaches the predetermined threshold, an alarm is activated. The beam detector protection range is minimum 16 feet on both sides of the transmitter / receiver unit and minimum 320 feet from transmitter to reflector and shall include a digital display for easy alignment & built in automatic gain control which compensates for signal deterioration from dust build-up. Operating ambient temperature range: - 30°C to 55°C, Operating humidity range: 10 to 95% RH non condensing. Approvals: UL listed / FM approved.	Each	126,110.00	126,110.00	126,110.00	126,110.00
14.73	VERY EARLY DETECTION SYSTEM / ASPIRATION DETECTION SYSTEM (ADDRESSABLE TYPE) (AS WHEN REQUIRED) :					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
	Supply & installation of addressable type Aspiration detection / Very early detection system including controller , pipe and accessories to provide very early warning and best nuisance alarm rejection, higher stability, increased longevity and particle characterization. Direct imaging the sampled particles using a CMOS imager combined with multiple photo-diodes allow vastly more data about the observed particles for a wide range of applications as per the guideline of the NFPA 72. An intelligent detector connects to the SLC loop of compatible intelligent fire alarm control panels using flash scan protocol to communicate up to five levels of events for display and use in control-by event system programming.					
	Operating conditions (Ambient: 0 ⁰ C to 39 ⁰ C, Sampled air: -20 ⁰ C to 60 ⁰ C, Humidity: 5% to 95% RH, non-condensing) IP rating: IP40.					
	Piping design should be completed using software based design tools (as per manufacturer recommendation).					
	Pipe Length: Linear: maximum 100 m and Branched maximum 130 m.					
	Pipe size: 25mm diameter .					
	Approvals : UL listed / FM approved.					
14.73.1	Area Coverage 250 m ²	Each	422,468.00	422,468.00	422,468.00	422,468.00
14.73.2	Area Coverage 500 m ²	Each	573,800.00	573,800.00	573,800.00	573,800.00
14.73.3	Area Coverage 1000 m ²	Each	662,077.00	662,077.00	662,077.00	662,077.00
14.73.4	Area Coverage 2000 m ²	Each	838,631.00	838,631.00	838,631.00	838,631.00
14.74	ADDRESSABLE BACnet / Modbus INTERFACE MODULE:					
	Supply & installation of addressable BACnet/Modbus Interface Modules for connecting Building Management System with the main Fire Alarm Control Panels as per NFPA 72 standard.					
	Approvals: UL listed / FM approved.	Each	107,193.00	107,193.00	107,193.00	107,193.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.75	Programming, testing & commissioning of addressable type fire alarm system by the competent engineer, technical personals and provide training to the pwd personals to operate the system perfectly and safely.					
14.75.1	FACP for up to 150 addressable devices	Each	94,582.00	92878	86446	86446
14.75.2	FACP for 151-250 addressable devices	Each	126,110.00	123837	115262	115262
14.75.3	FACP for 251-500 addressable devices	Each	189,165.00	185756	172893	172893
14.75.4	FACP for 501-750 addressable devices	Each	235,825.00	231576	215541	215541
14.75.5	FACP for 751-1000 addressable devices	Each	263,570.00	258820	240898	240898
14.75.6	FACP for 1001-1500 addressable devices	Each	291,314.00	286065	266256	266256
14.75.7	FACP for 1501-2000 addressable devices	Each	319,058.00	313309	291613	291613
14.76	Supply and installation of "Exit light" complete with rechargeable battery and charge light and other necessary accessories suitable for AC / DC power supply (220V single phase) as per NFPA 101	Each	3,783.00	3,783.00	3,783.00	3,783.00
14.77	Supply and installation of "Evacuation light" complete with rechargeable battery and charge light and other necessary accessories suitable for AC / DC power supply (220V single phase) as per NFPA 101	Each	4,414.00	4,414.00	4,414.00	4,414.00
14.78	SIGNALING CABLE WITH PVC CONDUIT & ACCESSORIES Surface conduit wiring with the following FPLR/ FPLP/ FPL type UL listed / FM Approved / LPCB Approved cable. PVC Insulation for each core shall be FR (Fire Rated) & Drain wire, shield (Aluminum Foil tape/ PET tape) shall meet the minimum requirement as per NEC (National Electric Code) or NFPA 70 or BS. Jacket shall be Fire Rated. All electrical contacts shall be of brass / copper connected through connector or soldering (no twisting shall be allowed) . The work shall be carried out as per direction & approval of the Engineer in charge.					
14.78.1	2C-1.5 sqmm (FPLR/ FPLP/ FPL) cable with 1.5 sqmm (FR) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.5 mm	meter	246.00	246.00	246.00	246.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.78.2	2C-2.5 sqmm (FPLR/ FPLP/ FPL) cable with 2.5 sqmm (FR) ECC wire through PVC pipe of minimum inner dia 25 mm having wall thickness of 1.5 mm	meter	322.00	322.00	322.00	322.00
14.79	FIRE RATED DOOR Supply & Installation of UL Listed /FM Approved Fire Rated Door completed with Panic Bar. The door shall be made with 1.5mm thick sheet steel painted with approved red color over a coat of primer. Thickness of the leaf shall be 40mm and filled with fire proof / resisting materials of minimum two hours rated. The Panic bar shall be Horizontal type, UL Listed/ FM approved made of Aluminium Alloy / steel, chrome plated, c/w with security lock to operated from outside. Door frame shall be made with same sheet steel of similar thickness. Hinges shall be quite smooth, robust and aligned properly. Peripheral clearance of the shutter should be as per standard code of practice. The opening of the door should be in one direction Door size shall be minimum 1000mm (width) x 2100mm (height). Measurement of the door shall include Frame	sqm	56,749.00	56,749.00	56,749.00	56,749.00
14.80	SPARE PARTS PUMP CONTROL PANEL FOR ENGINE DRIVEN FIRE PUMPS The controller shall be UL listed and FM approved & BMS supported , completely assembled and wired from the factory. The controller shall be 12 volt / 24 volt., and shall be complete with all necessary component and accessories. The controller shall be operable automatically on sensing low pressure in the system and shall be provided with a pressure-actuated switch having independent high & low calibrated adjustments. The switch shall be responsive to water pressure in the fire protection system. The pressure-sensing element of the switch shall be capable of momentary surge pressure of 300 psi (min ^m) without losing its accuracy, suitable provision shall be made for relieving pressure to the pressure actuated switch to allow testing of the operation of the controller and the pumping unit.	Each	397,246.00	397,246.00	397,246.00	397,246.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.81	PUMP CONTROL PANEL FOR MOTOR DRIVEN FIRE & JOCKEY PUMPS Supply, installation of UL listed / FM approved (for Motor driven fire pump) & UL listed / FM approved (for jockey pump), BMS supported fire & jockey pump control panel complete with MCCB / MCB / magnetic contactor / on-off push switch / indication lamp for phase indication, run, trip mode / ampere meter / volt meter / overload selector switch / phase failure protection device / dry operation protection device / volt guard / connector block / bus-bar / CT of rated capacity / ventilation fan / buzzer / cable lugs / and all other accessories. The panel shall be well dressed in side for safety purpose and for looking good. The panel shall be suitable for 3-phase 400 ± 5% volt 50Hz power supply. The panel shall with auto-manual mode to operate the pumps controlled by pressure sensors. For fire pump the panel shall have option to start the pump automatically by stop shall be manual. For jockey pump the panel shall be suitable to start-stop the pump automatically controlled by pressure sensor. Encloser of the panel shall be made with 16 SWG sheet steel and shall be painted with powder coating of red color approved as Fire code. Door of the panel shall be swing type with locking arrangement. Knob of main MCCB shall be extended in front screen. The panel shall be wall mounted type with fixing arrangement properly. The panel shall be manufactured in accordance with standard code of practice as NFPA/ NEMA / IEC / VDE / BS standards comprising of required capacity .					
14.81.1	Controller for motor driven Fire Pump 500GPM, 9 BAR	Each	136,199.00	136,199.00	136,199.00	136,199.00
14.81.2	Controller for motor driven Fire Pump 500GPM, 10 BAR	Each	147,549.00	147,549.00	147,549.00	147,549.00
14.81.3	Controller for motor driven Fire Pump 500GPM, 12 BAR	Each	170,248.00	170,248.00	170,248.00	170,248.00
14.81.4	Controller for motor driven Fire Pump 500GPM, 14 BAR	Each	204,298.00	204,298.00	204,298.00	204,298.00
14.81.5	Controller for motor driven Fire Pump 750GPM, 9 BAR	Each	147,549.00	147,549.00	147,549.00	147,549.00
14.81.6	Controller for motor driven Fire Pump 750GPM, 10 BAR	Each	158,898.00	158,898.00	158,898.00	158,898.00
14.81.7	Controller for motor driven Fire Pump 750GPM, 12 BAR	Each	198,623.00	198,623.00	198,623.00	198,623.00
14.81.8	Controller for motor driven Fire Pump 750GPM, 14 BAR	Each	226,998.00	226,998.00	226,998.00	226,998.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.81.9	Controller for motor driven Fire Pump 1000GPM, 9 BAR	Each	204,298.00	204,298.00	204,298.00	204,298.00
14.81.10	Controller for motor driven Fire Pump 1000GPM, 10 BAR	Each	215,648.00	215,648.00	215,648.00	215,648.00
14.81.11	Controller for motor driven Fire Pump 1000GPM, 12 BAR	Each	249,698.00	249,698.00	249,698.00	249,698.00
14.81.12	Controller for motor driven Fire Pump 1000GPM, 14 BAR	Each	272,397.00	272,397.00	272,397.00	272,397.00
14.81.13	Controller for motor driven Fire Pump 1250GPM, 9 BAR	Each	226,998.00	226,998.00	226,998.00	226,998.00
14.81.14	Controller for motor driven Fire Pump 1250GPM, 10 BAR	Each	249,698.00	249,698.00	249,698.00	249,698.00
14.81.15	Controller for motor driven Fire Pump 1250GPM, 12 BAR	Each	312,122.00	312,122.00	312,122.00	312,122.00
14.81.16	Controller for motor driven Fire Pump 1250GPM, 14 BAR	Each	340,497.00	340,497.00	340,497.00	340,497.00
14.81.17	Controller for JP (20 GPM, 9 BAR)	Each	100,888.00	100,888.00	100,888.00	100,888.00
14.81.18	Controller for JP (20 GPM, 10 BAR)	Each	113,499.00	113,499.00	113,499.00	113,499.00
14.81.19	Controller for JP (20 GPM, 12 BAR)	Each	126,110.00	126,110.00	126,110.00	126,110.00
14.81.20	Controller for JP (20 GPM, 14 BAR)	Each	151,332.00	151,332.00	151,332.00	151,332.00
14.81.21	Controller for JP (30 GPM, 9 BAR)	Each	126,110.00	126,110.00	126,110.00	126,110.00
14.81.22	Controller for JP (30 GPM, 10 BAR)	Each	138,721.00	138,721.00	138,721.00	138,721.00
14.81.23	Controller for JP (30 GPM, 12 BAR)	Each	176,554.00	176,554.00	176,554.00	176,554.00
14.81.24	Controller for JP (30 GPM, 14 BAR)	Each	201,776.00	201,776.00	201,776.00	201,776.00
14.81.25	Controller for JP (40 GPM, 9 BAR)	Each	126,110.00	126,110.00	126,110.00	126,110.00
14.81.26	Controller for JP (40 GPM, 10 BAR)	Each	138,721.00	138,721.00	138,721.00	138,721.00
14.81.27	Controller for JP (40 GPM, 12 BAR)	Each	163,943.00	163,943.00	163,943.00	163,943.00
14.81.28	Controller for JP (40 GPM, 14 BAR)	Each	176,554.00	176,554.00	176,554.00	176,554.00
14.81.29	Controller for JP (50 GPM, 9 BAR)	Each	151,332.00	151,332.00	151,332.00	151,332.00
14.81.30	Controller for JP (50 GPM, 10 BAR)	Each	163,943.00	163,943.00	163,943.00	163,943.00
14.81.31	Controller for JP (50 GPM, 12 BAR)	Each	189,165.00	189,165.00	189,165.00	189,165.00
14.81.32	Controller for JP (50 GPM, 14 BAR)	Each	220,692.00	220,692.00	220,692.00	220,692.00
14.82	STAIRCASE PRESSURIZATION SYSTEM					
	AIR LOUVER					
	Supply, installation, testing & commissioning of Louver made of Aluminium of following size with all necessary accessories and fittings approved by Engineer in charge					
14.82.1	400 x 200 mm	Each	3,228.00	3,228.00	3,228.00	3,228.00
14.82.2	400 x 250 mm	Each	4,036.00	4,036.00	4,036.00	4,036.00
14.82.3	450 x 200 mm	Each	3,632.00	3,632.00	3,632.00	3,632.00
14.82.4	450 x 250 mm	Each	4,086.00	4,086.00	4,086.00	4,086.00
14.82.5	750 x 350 mm	Each	8,656.00	8,656.00	8,656.00	8,656.00
14.82.6	850 x 350 mm	Each	9,605.00	9,605.00	9,605.00	9,605.00
14.82.7	900 x 350 mm	Each	10,154.00	10,154.00	10,154.00	10,154.00
14.82.8	900 x 400 mm	Each	11,486.00	11,486.00	11,486.00	11,486.00
14.82.9	1200 x 350 mm	Each	13,151.00	13,151.00	13,151.00	13,151.00
14.82.10	1200 x 400 mm	Each	14,074.00	14,074.00	14,074.00	14,074.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk.)	Unit Rate in Chattogram & Sylhet Zone (Tk.)	Unit Rate in Khulna, Barishal & Gopalganj Zone (Tk.)	Unit Rate in Rajshahi & Rangpur Zone (Tk.)
14.82.11	1500 x 550 mm	Each	19,976.00	19,976.00	19,976.00	19,976.00
14.82.12	1600 x 600 mm	Each	23,245.00	23,245.00	23,245.00	23,245.00
14.82.13	1650 x 550 mm	Each	21,973.00	21,973.00	21,973.00	21,973.00
14.82.14	1700 x 600 mm	Each	24,697.00	24,697.00	24,697.00	24,697.00
14.82.15	2200 x 800 mm	Each	42,615.00	42,615.00	42,615.00	42,615.00
14.83	PRESSURIZED FAN			-	-	-
	Supply, installation, testing & commissioning of Pressurized Fan of following capacity with VFD and pressure sensors control system including non return damper with all necessary accessories and fittings, equipments including all electrical & civil works as per drawing and direction of engineer in charge. Country of Manufacture: Malaysia/South Korea/Thailand.			-	-	-
14.83.1	Capacity : 14000 cfm, ESP 100 Pa	Each	353,108.00	353,108.00	353,108.00	353,108.00
14.83.2	Capacity : 18000 cfm, ESP 100 Pa	Each	453,995.00	453,995.00	453,995.00	453,995.00
14.83.3	Capacity : 28000 cfm, ESP 100 Pa	Each	706,215.00	706,215.00	706,215.00	706,215.00
14.84	DUCT			-	-	-
	Supply, installation and testing of galvanized plain sheets duct work of different sizes as per drawing and detail technical specification including supply of duct hanger/ isolator boxes, hanger rods, steel supports and all necessary materials, duct materials and construction shall be completed as per detail specification and SMACNA standards. Sample shall be approved by Engineer-in-Charge. The work shall be completed as per drawing and instruction of Engineer-in-Charge.			-	-	-
14.84.1	Ducts made of 24 SWG GP Sheets	Sft	202.00	202.00	202.00	202.00
14.84.2	Ducts made of 22 SWG GP Sheets	Sft	227.00	227.00	227.00	227.00
14.84.3	Ducts made of 20 SWG GP Sheets	Sft	265.00	265.00	265.00	265.00
14.84.4	Ducts made of 18 SWG GP Sheets	Sft	315.00	315.00	315.00	315.00

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ANNEXURE - 14

All buildings shall be classified according to their use or by considering the character of their occupancy. The occupancy classification groups shall be as follows:

Class	Category	Sub Category	Description
Occupancy A	Residential	A1	Single Family Dwelling
		A2	Two Family Dwelling
		A3	Flats or Apartments
		A4	Mess, Boarding House, Dormitories and Hostels
		A5	Hotels and Lodging Houses
Occupancy B	Educational	B1	Educational Facilities up to Higher Secondary Level
		B2	Facilities for Training and for Above Secondary Level
		B3	Pre School Facilities
Occupancy C	Institutional for Care	C1	Institution for Care of Children
		C2	Custodial Institution for Physically Capable Adults
		C3	Custodial Institution for Physically Incapable Adults
		C4	Penal and Mental Institution for Children
		C5	Penal and Mental Institution for Adults
Occupancy D	Health Care	D1	Normal Medical Facilities
		D2	Emergency Medical Facilities
Occupancy E	Business	E1	Office
		E2	Research and Testing Laboratories
		E3	Essential Services
Occupancy F	Mercantile	F1	Small Shops and Market (less than 300 sq. m.)
		F2	Small Shops and Market (more than 300 sq. m.)
		F3	Refueling Station
Occupancy G	Industrial	G1	Low Hazard Industry
		G2	Moderate Hazard Industry
Occupancy H	Storage	H1	Low Fire-risk Storage
		H2	Moderate Fire-risk Storage
Occupancy I	Assembly	I1	Large Assembly with Fixed Seats (1000 or more persons)
		I2	Small Assembly with Fixed Seats (less than 1000 persons)

Class	Category	Sub Category	Description
		I3	Large Assembly without Fixed Seats (300 or more person)

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Occupancy J	Hazardous	I4	Small Assembly without Fixed Seats (less than 30 persons)
		I5	Sports Facilities
		J1	Explosion Hazard Buildings
		J2	Chemical Hazard Buildings
		J3	Biological Hazard Buildings
Occupancy K	Garages	J4	Radiation Hazard Buildings
		K1	Parking Garage
		K2	Private Garage
Occupancy L	Utilities	K3	Repair Garage and Showrooms
Occupancy M	Miscellaneous	M1	Special Structure
		M2	Fences, Tanks and Towers

The details of occupancy classification of buildings are provided in Chapter 2 of Part III of BNBC 2020.

TABLE 14.2 : SMOKE AND VENT SIZE AND SPACING

Use group	Hazard condition	Vent area to Floor area ratio	Max spacing of vent centers
Occupancy H1	Low hazard	1:150	45 m
Occupancy H2	Moderate hazard	1:100	36 m
Occupancy J1	High hazard	1:30 to 1:50	22.5 m to 30m
Occupancy J2,J3,J4	High hazard	1:30 to 1:50	22.5 m to 30m
Occupancy K1,K3	Low hazard	1:150	45 m

TABLE 14.3: FIRE PROTECTION FLOW REQUIREMENTS

Building Type	Duration (up to 51 m) (minute, min)	Duration (51 to 102 m) (minute, min)	Duration (Above 102 m) (minute, min)
Light hazard- I	30	38	45
Light hazard- II	50	62	75
Ordinary hazard- I	75	95	112
Ordinary hazard - II	75	95	112
Ordinary hazard - III	75	95	112

Notes:

Light hazard - I : Occupancy groups, A1, A2, A3, E1

Light hazard - II : Occupancy groups, A4, A5, B, C, D, E2, E3, I2, I4 & F1.

Ordinary hazard - I : Occupancy groups, I1, I3, I5, F2, F3, G1

Ordinary hazard- II : Occupancy groups, G2 & H1

Ordinary hazard- III : Occupancy groups, H2

Extra hazard : Occupancy group, j - pressure and flow requirement for this group shall be

Note : The standpipe shall be located in noncombustible enclosure such that it will be able to provide hose stream to the most remote area of the floor served.

TABLE 14.4 : PIPING FOR SPRINKLER SYSTEM

Material	Standard
Copper and Copper-Alloy	ASTM B32, ASTM B75, ASTM B88, ASTM B25, ANSI B36
Steel	ASTM A53, ASTM A120, ASTM A135, ASTM A795

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TABLE: 14.5 : REQUIRED GPM IN ACCORDANCE WITH NO. OF RISER

No. of Riser	Required GPM
1	500
2	750
3	1000
4 or more	1250

NB: If the building is fully sprinklered , the maximum GPM should be 1000

TABLE 14.6: REQUIRED PRESSURE FOR DIFFERENT PUMPS & HEADS

FLOW RATE	HEIGHT	HEADER & LOOP PIPE DIA	RISER PIPE DIA	REQUIRED PUMP PRESSURE
(GPM)	(METER)	INCH	INCH	(BAR)
500	22-30	6	4	9
	31-33	6	4	10
	34-46	6	6	10
	47--62	6	6	12
	63-66	8	8	12
	67-74	8	8	14
750	22-26	6	4	9
	27-33	6	4	10
	34-42	6	6	10
	43-62	6	6	12
	63-66	8	8	12
	67-74	8	8	14
1000	22-26	6	4	10
	27-33	6	4	12
	34-50	6	6	12
	51-62	8	6	12
	63-74	8	8	14
1250	22-26	8	4	9
	27-33	8	4	10
	34-38	8	6	10
	39-58	8	6	12
	59-62	8	6	14
	63-74	8	8	14

NB : Friction loss is calculated considering maximum horizontal distance between pump & farthest riser 120 feet (for 500 gpm) , 220 feet (for 750 gpm) , 420 feet (for 1000 gpm) , 620 feet (for 1250 gpm) .Residual pressure 4.5 bar is considered.

Table 14.7: MINIMUM DIAMETER FOR RELIEF VALVES

PUMP RATING (GPM)	MINIMUM DIAMETER	
	INCH	
	RELIEF VALVE	RELIEF VALVE DISCHARGE PIPE
500	3	6
750	4	6
1000	4	8
1250	6	8

Table 14.8: SIZE OF WATER SUPPLY STEEL PIPE TO SPRINKLERS





Pipe Size mm (inch) nominal	No. of Sprinkler connection for light Hazard	No. of Sprinkler connection ordinary Hazard	No. of Sprinkler connection ordinary Extra Hazard
25 (1)	2	2	1
32 (1 1/4)	3	3	2
38 (1 1/2)	5	5	5
50 (2)	10	10	8
63 (2 1/2)	30	20	15
75 (3)	60	40	27
88 (3 1/2)	100	65	40
Pipe Size mm (inch) nominal	No. of Sprinkler connection for light Hazard	No. of Sprinkler connection ordinary Hazard	No. of Sprinkler connection ordinary Extra Hazard
100 (4)	NL**	100	55
125 (5)	-	160	90
150 (6)	-	275	150
200 (8)	-	400***	225***

* Definition of these terms are given in Table 14.3

** No limit

*** One sprinkler system riser of combined system riser shall serve the floor area not more than 4850 m² for light and ordinary hazardous occupancy and 2325 m² for extra hazardous occupancy.

Table 14.9: CEILING AREA FOR A SPRINKLER

Construction Type	Light Hazard** Area, m ²		Ordinary Hazard** area, m ²		Extra Hazard Area, m ²	
	Protected area	Spacing (Max)	Protected area	Spacing (Max)	Protected area	Spacing (Max)
	ft ² (m ²)	ft(m)	ft ² (m ²)	ft(m)	ft ² (m ²)	ft(m)
Roof or Floor on Trusses, Girders or Beam with High Piling ***	200 (18.6)	15(4.6)	130(12.1)	15(4.6)	100(9.3)	15(4.6)
Open Wood joists with High Piling ***	225(20.9)	15(4.6)	130(12.1)	15(4.6)	100(9.3)	15(4.6)
other type of construction with High Piling ***	168(15.6)	15(4.6)	130(12.1)	15(4.6)	100(9.3)	15(4.6)

Notes :

* Maximum distance in m between sprinklers and between line of piping.

** The definitions of these terms are given in Table 14.3

*** Storage facilities which permit closely piled materials over 4.5 m or materials on rack over 3.6 m.

TABLE 14.10: POWER RATING OF MOTOR DRIVEN FIRE PUMP

Flow	Pressure	Power (more or less)
GPM	Bar	KW
500	9	55
500	10	75
500	12	90
500	14	95
750	9	75
750	10	95
750	12	136
750	14	136
1000	9	112
1000	10	112
1000	12	150
1000	14	187
1250	9	112
1250	10	150

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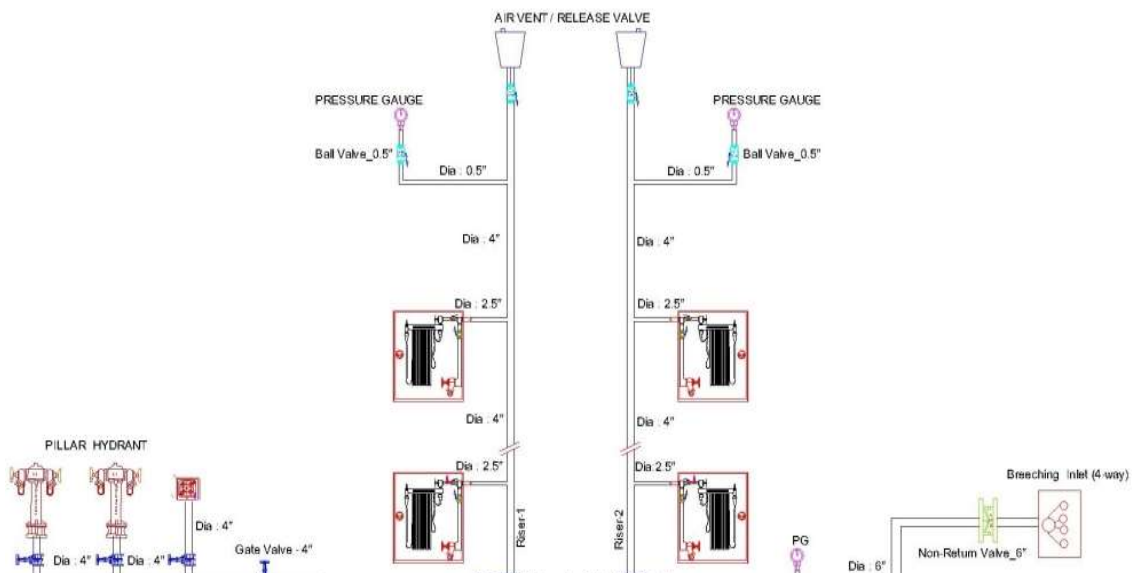
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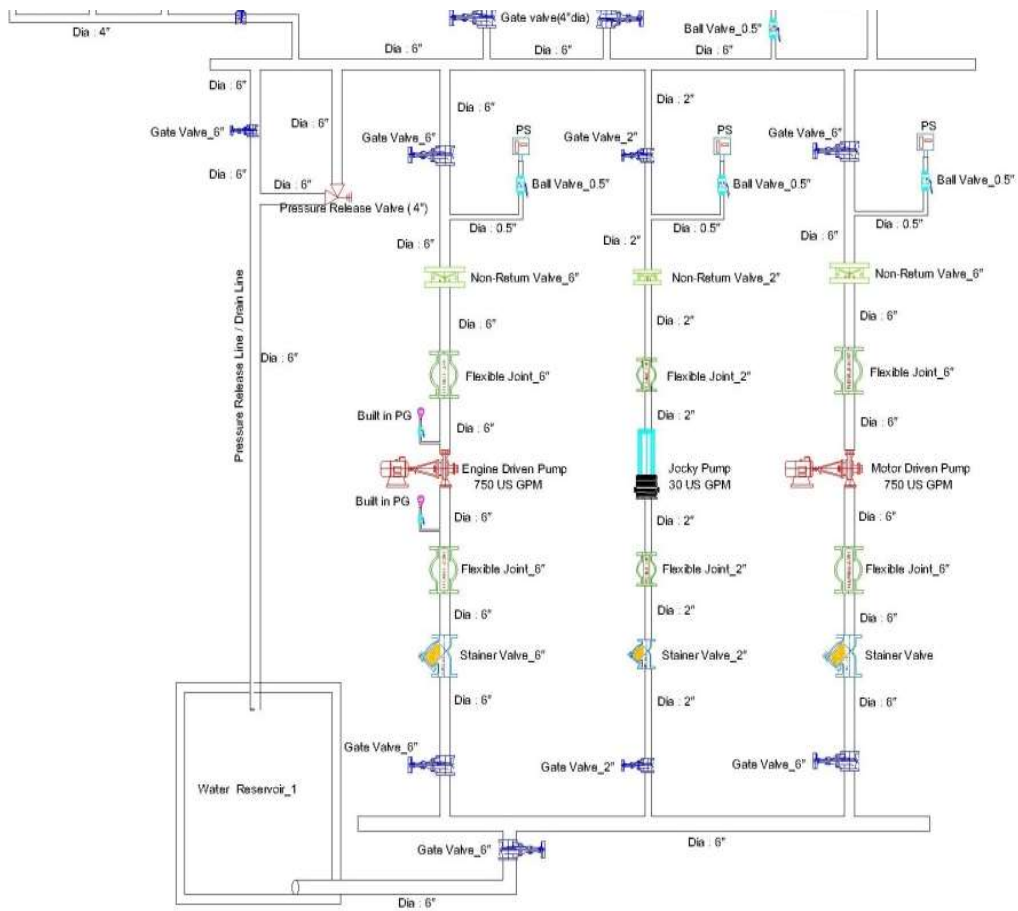
1250	12	150
1250	14	187

NB: Generator / cable size should be determined considering starting current 2.5 times of rated current of motor.

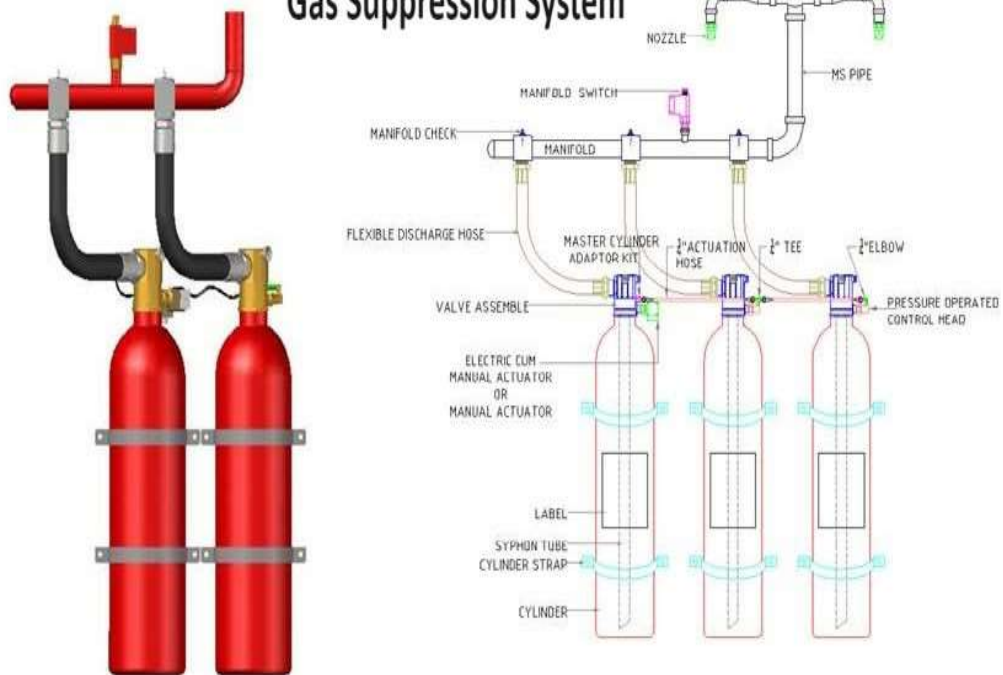
TYPICAL FIRE PROTECTION SYSTEM (HYDRANT SYSTEM)



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Gas Suppression System



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Subhead-15
CCTV & Surveillance Systems

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
15.1	IP Camera & Accessories :Type -A					
15.1.1	Supply and fixing of 16 Channel NETWORK VIDEO RECORDER (NVR) of following technical specification or equivalent :					
	IP Camera Input : 16 channels					
	Network Bandwidth : Incoming-256 Mbps or above , Outgoing -128 Mbps or above					
	Resolution : 8MP, 6MP, 5MP, 4MP, 3MP, 1080p, 1.3MP, 720p, etc.					
	Video Output : 3840 × 2160; 1920 × 1080; 1280 × 1024; 1280 × 720					
	Video compression : H.265/H.264/MJPEG					
	Network Protocol : HTTP; HTTPS; TCP/IP; IPv4/IPv6; RTSP; SMTP; NTP; DHCP; DNS; DDNS; FTP; etc.					
	Sync Playback : 1/4/8/16					
	Playback Function : 1. Play; pause; stop; fast forward; fast backward; rewind; play by frame					
	Audio Input : 1 channel, RCA connector					
	Audio Output : 1-ch, RCA					
	HDD : 2 SATA interfaces At least 6 TB capacity for each disk					
	Alarm Input : 4 channels					
	Alarm Output : 2 channels					
	Network : 1 RJ-45 10/100/1000 Mbps self-adaptive Ethernet port					
	PoE : 16 ports (IEEE802.3at/af)					
	Power Supply : Single, 100V-240V AC, 50 Hz					
	Power Consumption : NVR: ≤ 20 W(without HDD) ≤ 130 W Supported standard IEEE 802.3 af/at					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Operating Temperature : +0°C to +40°C Operating Humidity : 10% to 90% Certifications : CE, UL, FCC country of origin : USA/Japan /UK/ EU countries or equivalent accepted/ approved by the Engineer in Charge	Each	124,218.00	124,218.00	124,218.00	124,218.00
15.1.2	Supply and fixing of 32 Channel NETWORK VIDEO RECORDER (NVR) of following technical specification or equivalent : IP Camera Input : 32 channels Network Bandwidth : Incoming-256 Mbps or above , Outgoing -128 Mbps or above Resolution : 12MP, 8MP, 6MP, 5MP, 4MP, 3MP, 1080p, 1.3MP, 720p, etc. Video Output : 3840 × 2160; 1920 × 1080; 1280 × 1024; 1280 × 720 Video compression : H.265/H.264/MJPEG Network Protocol : HTTP; HTTPS; TCP/IP; IPv4/IPv6; RTSP; SMTP; NTP; DHCP; DNS; DDNS; FTP; etc. Sync Playback : 1/4/8/16 Playback Function : 1. Play; pause; stop; fast forward; fast backward; rewind; play by frame Audio Input : 1 channel, RCA connector Audio Output : 1-ch, RCA HDD : 4 SATA interfaces At least 6 TB capacity for each disk Alarm Input : 4 channels Alarm Output : 2 channels Network : 1 RJ-45 10/100/1000 Mbps self-adaptive Ethernet port PoE : 16 ports (IEEE802.3at/af) Power Supply : Single, 100V–240V AC, 50 Hz					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Power Consumption : NVR: ≤ 20 W(without HDD) ≤ 185 W Supported standard IEEE 802.3 af/at	Each	224,476.00	224,476.00	224,476.00	224,476.00
	Operating Temperature : $+0^{\circ}\text{C}$ to $+40^{\circ}\text{C}$					
	Operating Humidity : 10% to 90%					
	Certifications : CE, UL, FCC					
	country of origin : USA/Japan /UK/ EU countries or equivalent accepted/ approved by the Engineer in Charge					
15.1.3	Supply and fixing of 2 MP, varifocal , IP Dome CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/2.8" Progressive Scan CMOS , 2 Megapixel (minimum)					
	Min. Illumination : At least 0.05lux/F1.4(color, 30IRE) or 0.1lux/F1.8(color, 50IRE), B/W: 0 Lux with IR					
	Shutter Speed : At least 1/25 s to 1/15000 s					
	Wide Dynamic Range : 120 dB or above					
	Angle Adjustment : Pan: 350° , tilt: 130° , rotate: 350°					
	Lens Type and Focal Length : Varifocal lens, at least 3.4 to 8.9 mm					
	Focal Length & FOV : horizontal FOV 100° – 37° , vertical FOV 49° – 21° or above					
	Aperture : F1.8 maximum					
	Supplement Light Type : IR					
	IR Range : minimum 30m					
	Max. Resolution : 1920 (H) $\times$ 1080 (V)					
	Video Stream : At least 2 streams ,Main Stream: 1080P (1 fps–25/30 fps)					
	Video Compression : H.265/H.264/MJPEG					
	Region of Interest (ROI) : Off/On					
	Audio Sampling Rate : 8 kHz/16 kHz/48 kHz					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC	Each	78,503.00	78,503.00	78,503.00	78,503.00
	API : ONVIF (Profile S/Profile G/Profile T)					
	Protocols : IPv4, IPv6, UDP, TCP, HTTP, HTTPS, RTP/RTCP, IGMP, ICMP, NTP, DNS, DHCP, SMTP etc.					
	SNR : >55 dB					
	Day/Night Switch : Day, Night, Auto					
	On-Board Storage : Micro SD card					
	Ethernet Interface : RJ-45 (10/100 Base-T)					
	Basic Event : Motion detection, Tamper Detection					
	Power Supply : 12 VDC $\pm 5\%$, 24 VAC $\pm 10\%$ or Power-over-Ethernet , PoE (802.3 at /af)					
	Power Consumption : maximum 12 Watt					
	Camera Material : Metal					
	Operating Temperature and humidity : Temperature :-43 °C to +50 °C for continuous operation Humidity: 5% to 93% RH non condensing					
	Protection : IP 66, IK10					
	Certifications : CE,UL,FCC					
	country of origin : USA/Japan /UK/ EU countries or equivalent accepted/ approved by the Engineer in Charge					
15.1.4	Supply and fixing of 2 MP, varifocal , IP Bullet CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/2.8" Progressive Scan CMOS , 2 Megapixel (minimum)					
	Min. Illumination : At least 0.052lux/F1.4(color, 30IRE) or 0.07lux/F1.6(color, 50IRE), B/W: 0 Lux with IR					
	Shutter Speed : At least 1/25 s to 1/15000 s					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Wide Dynamic Range : 120 dB or above					
	Lens Type and Focal Length : Varifocal lens, at least 3 to 9 mm					
	Focal Length & FOV : horizontal FOV 100°–37°, vertical FOV : 52°–21° or above					
	Aperture : F1.6 maximum					
	Supplement Light Type : IR					
	IR Range : minimum 40 m					
	Max. Resolution : 1920 (H) × 1080 (V)					
	Video Stream : At least 2 streams ,Main Stream: 1080P (1 fps–25/30 fps)					
	Video Compression : H.265/H.264/MJPEG					
	Region of Interest (ROI) : Off/On					
	Audio Sampling Rate : 8 kHz/16 kHz/48 kHz					
	Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC					
	API : ONVIF (Profile S/Profile G/Profile T)					
	Protocols : IPv4, IPv6, UDP, TCP, HTTP,HTTPS, RTP/RTCP, IGMP, ICMP, NTP, DNS, DHCP, SMTP etc.					
	SNR : >55 dB					
	Day/Night Switch : Day, Night, Auto					
	On-Board Storage : Micro SD card					
	Ethernet Interface : RJ-45 (10/100 Base-T)					
	Basic Event : Motion detection, Tamper Detection					
	Power Supply : 12 VDC ±5%, 24 VAC ±10% or Power-over-Ethernet , PoE (802.3 at /af)					
	Power Consumption : maximum 15 Watt					
	Camera Material : Metal					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Operating Temperature : Temperature :-43 °C to +50 °C for continuous operation Humidity: 5% to 93% RH non condensing Protection : IP 66, IK10 Certifications : CE,UL,FCC country of origin : USA/Japan /UK/ EU countries or equivalent accepted/ approved by the Engineer in Charge	Each	78,503.00	78,503.00	78,503.00	78,503.00
15.1.5	Supply and fixing of 5 MP, varifocal , IP Dome CAMERA (including lens, bracket, housing) of following technical specification or equivalent : Image Sensor : 1/2.9"or above Progressive Scan CMOS , 5 Megapixel (minimum) Min. Illumination : At least 0.24 lux/F1.3(color, 30IRE) or 0.13lux/F1.3(color, 50IRE), B/W: 0 Lux with IR Shutter Speed : At least 1/25 s to 1/15000 s Wide Dynamic Range : 120 dB or above Angle Adjustment : Pan: 350°, tilt: 130°, rotate: 350° Lens Type and Focal Length : Varifocal lens, at least 3 to 8 mm Focal Length & FOV : horizontal FOV 88°–40°, vertical FOV : 53°–23° or above Aperture : F1.4 maximum Supplement Light Type : IR IR Range : minimum 30m Max. Resolution : 3072 x 1728 or 2592x1944 or 2560 x Video Stream : At least 2 streams ,Main Stream: 5MP (1 fps–25/30 fps) Video Compression : H.265/H.264/MJPEG Region of Interest (ROI) : Off/On Audio Sampling Rate : 8 kHz/16 kHz/48 kHz					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC	Each	109,873.00	109,873.00	109,873.00	109,873.00
	API : ONVIF (Profile S/Profile G/Profile T)					
	Protocols : IPv4, IPv6, UDP, TCP, HTTP, HTTPS, RTP/RTCP, IGMP, ICMP, NTP, DNS, DHCP, SMTP etc.					
	SNR : >55 dB					
	Day/Night Switch : Day, Night, Auto					
	On-Board Storage : Micro SD card					
	Ethernet Interface : RJ-45 (10/100 Base-T)					
	Basic Event : Motion detection, Tamper Detection					
	Power Supply : 12 VDC $\pm 5\%$, 24 VAC $\pm 10\%$ or Power-over-Ethernet, PoE (802.3 at /af)					
	Power Consumption : maximum 13 Watt					
	Camera Material : Metal					
	Operating Temperature and humidity : Temperature :-43 °C to +50 °C for continuous operation Humidity: 5% to 93% RH non condensing					
	Protection : IP 66, IK10					
	Certifications : CE, UL, FCC					
	country of origin : USA/Japan /UK/ EU countries or equivalent accepted/ approved by the Engineer in Charge					
15.1.6	Supply and fixing of 5 MP, varifocal, IP Bullet CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/2.8" or above Progressive Scan CMOS, 5 Megapixel (minimum)					
	Min. Illumination : At least 0.185lux/F1.3(color, 30IRE) or 0.15lux/F1.2(color, 50IRE), B/W: 0 Lux with IR					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Shutter Speed : At least 1/25 s to 1/15000 s					
	Wide Dynamic Range : 120 dB or above					
	Lens Type and Focal Length : Varifocal lens, at least 3 to 8.5 mm					
	Focal Length & FOV : horizontal FOV 88°–36°, vertical FOV : 50°–23° or above					
	Aperture : F1.4 maximum					
	Supplement Light Type : IR					
	IR Range : minimum 30m					
	Max. Resolution : 3072 x 1728 or 2592x1944 or 2560 x 1920					
	Video Stream : At least 2 streams ,Main Stream: 5 MP (1 fps–25/30 fps)					
	Video Compression : H.265/H.264/MJPEG					
	Region of Interest (ROI) : Off/On					
	Audio Sampling Rate : 8 kHz/16 kHz/48 kHz					
	Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC					
	API : ONVIF (Profile S/Profile G/Profile T)					
	Protocols : IPv4, IPv6, UDP, TCP, HTTP,HTTPS, RTP/RTCP, IGMP, ICMP, NTP, DNS, DHCP, SMTP etc.					
	SNR : >55 dB					
	Day/Night Switch : Day, Night, Auto					
	On-Board Storage : Micro SD card					
	Ethernet Interface : RJ-45 (10/100 Base-T)					
	Basic Event : Motion detection, Tamper Detection					
	Power Supply : 12 VDC ±5%, 24 VAC ±10% or Power-over-Ethernet , PoE (802.3 at /af)					
	Power Consumption : maximum 15 Watt					
	Camera Material : Metal					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Operating Temperature : Temperature :-43 °C to +50 °C for continuous operation Humidity: 5% to 93% RH non condensing					
	Protection : IP 67, IK10					
	Certifications : CE,UL,FCC					
	country of origin : USA/Japan /UK/ EU countries or equivalent accepted/ approved by the Engineer in Charge	Each	100,888.00	100,888.00	100,888.00	100,888.00
15.1.7	Supply and fixing of 2 MP, Outdoor PTZ CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/2.8" Progressive Scan CMOS , 2 Megapixel (minimum)					
	Min. Illumination : At least Color: 0.0186 lux /F1.6), B/W: 0 Lux with IR					
	Shutter Speed : 1/3 s to 1/30,000 s					
	Wide Dynamic Range : 120 dB or above					
	Focal Length : At least 4.8 to 135 mm					
	Optical Zoom : 30 x or above					
	Digital Zoom : 12x					
	Focal Length & FOV : horizontal FOV 58.3°–2.6°,					
	Aperture : At least F1.6 - F4.4					
	Supplement Light Type : IR					
	IR Range : minimum 180 m					
	Pan/Tilt range : 0°~360° ; -15°~90° or -90° to 20°(auto flip)					
	Pan speed : preset speed :240°/s					
	Tilt speed : preset speed :160°/s					
	Presets : minimum 256					
	Max. Resolution : 1920x1080 or above					
	Main Stream : Main Stream: 1920x1080 (1 fps–25 fps) with at least 1 sub-stream					
	Video Compression : H.265/H.264/MJPEG					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Audio Sampling Rate : 8 kHz/16 kHz/32 kHz/44.1 kHz/48 kHz	Each	291,314.00	291,314.00	291,314.00	291,314.00
	Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC					
	API : ONVIF (Profile S/Profile G/Profile T)					
	Protocols : TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, NTP, UPnP, SMTP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP,, PPPoE, ARP, SNMP etc.					
	SNR : ≥ 56 dB					
	Day/Night Switch : Day, Night, Auto, Schedule					
	Alarm : 1 input, 1 output					
	Audio : 1 input (line in), 1 output (line out)					
	On-Board Storage : Micro SD					
	Ethernet Interface : RJ-45 (10/100 Base-T)					
	Basic Event : Motion detection ,video tampering alarm					
	Power Supply : DC 12V /24 V /AC 24 V ($\pm 30\%$), PoE (802.3 at /af)					
	Power Consumption : maximum 25 Watt					
	Camera Material : Metal					
	Operating Temperature and humidity : Temperature :-43 °C to +50 °C for continuous operation Humidity: 5% to 90% RH non condensing					
	Protection : IP 66 or above					
	Certifications : CE,UL,FCC					
	country of origin : USA/Japan /UK/ EU countries or equivalent accepted/ approved by the Engineer in Charge					
		Each	291,314.00	291,314.00	291,314.00	291,314.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
15.2	IP Camera & Accessories :Type -B					
15.2.1	Supply and fixing of 8 Channel NETWORK VIDEO RECORDER (NVR) of following technical specification or equivalent :					
	IP Camera Input : 8 Channel					
	Network Bandwidth : Incoming-80 Mbps , Outgoing -80 Mbps or above					
	Audio Output : yes					
	Interface : 1 HDMI, 1 VGA					
	Resolution : HDMI: 3840×2160, 1920×1080, 1280×1024, 1280×720					
	: VGA: 1920×1080, 1280×1024, 1280×720					
	Decoding Capacity : 1ch@8MP 30fps, 4ch@1080P 30fps/2-ch@12 MP (20 fps)/4-ch@8 MP (25 fps)/8-ch@4 MP (30 fps)					
	Compression : Video:H.265+/H.265/H.264+/H.264/ Audio compression: G.711ulaw /G.711alaw / G.722/ G.726					
	Resolution : 8MP/6MP/5MP/4MP/3MP/1080P/ 720P/etc..					
	Two-way Talk : 1-ch, RCA					
	Sync Playback : 4 ch					
	Search Mode : Time /Date, MD and Exact Search (accurate to second)					
	Playback Function : Play, Pause, Stop, Rewind, Fast play, Slow Play, Next File, Previous File, Next Camera, Previous Camera, Full Screen, Shuffle, Backup Selection, Digital Zoom					
	Interface : 1, RJ-45 10/100/1000 Mbps self-adaptive Ethernet interface					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	PoE : 8 ports (IEEE802.3at/af)	Each	18,916.00	18,916.00	18,916.00	18,916.00
	Network Function : TCP/IP, DHCP, IPv4, IPv6, DNS, DDNS, RTSP, , HTTP, HTTPS etc.					
	Max. User Access : 64					
	Internal HDD : At least 1 SATA interfaces Up to 10 TB capacity for each HDD					
	USB : Front panel: 1 × USB 2.0; Rear panel: 1 × USB 3.0/USB 2.0					
	Power Supply : Single, DC54V/ 100 to 240 VAC, 50 Hz					
	Power Consumption : NVR: ≤ 15 W (without HDD)					
	Operating Conditions : PoE: ≤ 80W					
	Operating Conditions : -10 °C to 55 °C (14 °F to 131 °F) 30–85% RH					
	Certifications : CE,FCC					
	Accepted/ Approved by the Engineer in Charge					
15.2.2	Supply and fixing of 16 Channel NETWORK VIDEO RECORDER (NVR) of following technical specification or equivalent :					
	IP Camera Input : 16 channels	Each	18,916.00	18,916.00	18,916.00	18,916.00
	Network Bandwidth : Incoming-160 Mbps , Outgoing -96 Mbps or above					
	Resolution : 8MP, 6MP, 5MP, 4MP, 3MP, 1080p, 1.3MP, 720p, etc.					
	Decoding Capability : 2-ch@12 MP (20 fps)/4-ch@8 MP (25 fps)/8-ch@4 MP (30 fps)/16-ch@1080p (30 fps)/ 8 channels@1080p (30 fps)					
	Video Output : HDMI: 3840 × 2160; 1920 × 1080; 1280 × 1024; 1280 × 720					
	Video Output : VGA: 1920 × 1080; 1280 × 1024; 1280 × 720					
	Video Compression : H.265+/H.265/H.264+/H.264					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Audio : PCM/G.711A/ G.711U; /G.722/G.726	Each	60,533.00	60,533.00	60,533.00	60,533.00
	Network Protocol : HTTP; HTTPS; TCP/IP; IPv4/IPv6; SNMP; RTSP; SMTP; NTP; DHCP; DNS; DDNS; FTP; etc.					
	Playback Function : 1. Play; pause; stop; fast forward; fast backward; rewind; play by frame ; 2. Full screen; backup (cut/file) ; partially enlarge; audio on/off					
	Audio Input : 1 channel, RCA connector					
	Audio Output : 1-ch, RCA					
	HDD : 4 SATA interfaces Up to 10 TB capacity for each disk					
	Alarm Input : 16 channels					
	Alarm Output : 4 channels					
	RS-232 : 1 RS-232					
	RS-485 : 1 RS-485					
	USB : 1 front USB 2.0 port, 1 rear USB 3.0 port					
	Network : 1 RJ-45 10/100/1000 Mbps self-adaptive Ethernet port					
	PoE : 16 ports (IEEE802.3at/af)					
	Power Supply : Single, 100V–240V AC, 50 Hz					
	Power Consumption : NVR: ≤ 20 W(without HDD)					
	: ≤ 150 W					
	Supported standard IEEE 802.3 af/at					
	Operating Temperature : -10 °C to 55 °C (14 °F to 131 °F)					
	Operating Humidity : 10% to 90%					
	Certifications : CE, FCC					
	Accepted/ Approved by the Engineer in Charge	Each	60,533.00	60,533.00	60,533.00	60,533.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
15.2.3	Supply and fixing of 2 MP, Fixed-focal ,IP DOME CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/2.8" or above ,2 Megapixel (minimum) progressive CMOS					
	Max. Resolution : 1920 (H) ×1080 (V)					
	Scanning System : Progressive					
	Electronic Shutter Speed : 1/3 s to 1/100,000 s					
	Min. Illumination : Color: minimum 0.005 Lux @ (F1.2/F1.6, AGC ON), 0 Lux with IR					
	S/N Ratio : ≥ 52 dB					
	IR Illumination Distance : 30 m or above					
	Pan/Tilt/Rotation Range : Pan: 0° to 355° , tilt: 0° to 65° , rotate: 0° to 355°					
	Lens Type : Fixed-focal					
	Mount Type : M12					
	Focal Length : 2.8/3.6/4/6mm					
	Max. Aperture : F1.6					
	Field of View : 2.8 mm, horizontal field of view: 106° or above; 3.6 mm, horizontal field of view: 87° or above ; 4 mm, horizontal field of view: 86.4° or above					
	Iris Type : Fixed					
	Smart event : Line crossing /Tripwire detection, intrusion detection					
	Video Compression : H.265/H.264					
	Video Frame Rate : Main :1920 × 1080 (1 fps-25/30 fps) Sub:704 × 576 (1 fps-25fps)/50Hz: 25fps (640 × 480)					
	Stream Capability : 2 streams					
	Video Bit Rate : 32 kbps–6144 kbps/32 Kbps to 16 Mbps					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	BLC : Yes					
	HLC : Yes					
	WDR : 120dB					
	White Balance : yes					
	Noise Reduction : 3D NR					
	Motion Detection : yes					
	Region of Interest(RoI) : yes					
	Smart Illumination : yes					
	Image Rotation : yes					
	Privacy Masking : yes					
	Alarm Event : Motion detection, video tampering alarm, exception (network disconnected, IP address conflict, illegal login, HDD full, HDD error) intrusion detection, line crossing /tripwire detection					
	Network : 1 RJ45 10M/100M self-adaptive Ethernet port					
	Cyber Security : Password protection, encryption, , 802.1X authentication, IP address filtering, Digest, WSSE etc.					
	Protocol : TCP/IP, UDP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnP, SMTP, IGMP, 802.1X, IPv6, UDP, Bonjour, etc.					
	Interoperability : ONVIF (PROFILE S, PROFILE G, PROFILE T)					
	User/Host : at least 20					
	Storage : Micro SD card (support min 128 GB); NAS;FTP					
	Browser : IE, Chrome, Firefox					
	Power Supply : 12V DC/PoE (802.3 at /af)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Operating Conditions : -30 °C to +60 °C (-22 °F to +140 °F), Humidity 95% or less (non-condensing)					
	Protection : IP67, IK10					
	Casing : Camera body: metal, bubble: plastic					
	Certifications : CE, FCC					
	Accepted/ Approved by the Engineer in Charge	Each	10,089.00	10,089.00	10,089.00	10,089.00
15.2.4	Supply and fixing of 2 MP, Fixed-focal, IP Bullet CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/2.8" Progressive Scan CMOS					
	Max. Resolution : 1920 × 1080					
	Scanning System : Progressive Scan					
	Electronic Shutter Speed : 1/3 s to 1/100,000 s					
	Min. Illumination : Color: 0.005 Lux @ (F1.2/F1.6, AGC On) , 0 Lux with IR					
	S/N Ratio : ≥ 52 dB					
	IR Illumination Distance : up to 80 m					
	Pan/Tilt/Rotation Range : Pan: 0° to 360°, tilt: 0° to 100°, rotate: 0° to 360°					
	Lens Type : Fixed-focal					
	Mount Type : M12					
	Focal Length : 3.6/4/6/8 mm					
	Max. Aperture : F1.6					
	Field of View : 3.6~4 mm, horizontal field of view: 86.4°-87°, 6 mm, horizontal field of view: 52°~54°, 8 mm, horizontal field of view: 41°~44°,					
	Iris Type : Fixed					
	Smart event : Line crossing /Tripwire detection, intrusion detection					
	Video Compression : H.265; H.264;					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Video Frame Rate : main: 1920 × 1080 (1 fps–25/30 fps) sub (704 × 576, 640 × 480, 640 × 360, 320 × 240)(1 fps–25 fps)					
	Stream Capability : minimum 2 streams					
	Video Bit Rate : 12 kbps–6144 kbps or above					
	BLC : Yes					
	HLC : Yes					
	WDR : 120 dB					
	White Balance : adjustable by client software or web browser					
	Noise Reduction : 3D NR					
	Motion Detection : yes					
	Region of Interest (RoI) : Yes (2 areas- minimum)					
	Smart Illumination : yes					
	Image Rotation : 0°/90°/180°/270° (Supports 90°/270° with 1080p resolution and lower.)					
	Mirror : yes					
	Privacy Masking : yes					
	Audio Compression : G.711a; G.711Mu; G.726					
	Alarm Event : Motion detection, video tampering alarm, exception (network disconnected, IP address conflict, illegal login, HDD full, HDD error) intrusion detection, line crossing /tripwire detection					
	Network : 1 RJ45 10M/100M self-adaptive Ethernet port					
	Cyber Security : Password protection, encryption, HTTPs, 802.1X authentication, IP address filtering, Digest, WSSE etc.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Protocol : TCP/IP, UDP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnP, SMTP, IGMP, 802.1X, IPv6, UDP, Bonjour, etc.					
	Interoperability : ONVIF (PROFILE S, PROFILE G, PROFILE T)					
	User/Host : minimum 20 users					
	Storage : FTP; Micro SD card (support up to. 128 GB); NAS; SFTP					
	Browser : IE, Chrome, Firefox					
	Power Supply : 12 VDC $\pm$ 25%, PoE(802.3 at /af)					
	Power Consumption : 12.5 W max					
	Operating Conditions : -30 °C to +60 °C (-22 °F to +140 °F), Humidity 95% or less (non-condensing)					
	Protection : IP 67					
	Casing : Metal					
	Certifications : CE,UL,FCC					
	Accepted/ Approved by the Engineer in Charge	Each	10,089.00	10,089.00	10,089.00	10,089.00
15.2.5	Supply and fixing of 4 MP, Fixed-focal ,IP Dome CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/3" or above 4 Megapixel (minimum) progressive CMOS					
	Max. Resolution : 2688 (H) $\times$ 1520 (V)					
	Scanning System : Progressive					
	Electronic Shutter Speed : 1/3 s to 1/100,000 s					
	Min. Illumination : Color: minimum 0.008 lux @(F1.2/F1.6, AGC ON), 0 lux with IR					
	S/N Ratio : $\geq$ 52 dB					
	IR Illumination Distance : 30 m or above					

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Rev

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Pan/Tilt/Rotation Range : Pan: 0° to 355° , tilt: 0° to 65° , rotate: 0° to 355°					
	Lens Type : Fixed-focal					
	Mount Type : M12					
	Focal Length : 2.8/3.6/4 mm					
	Max. Aperture : F1.6					
	Field of View : 2.8mm- Horizontal 102.0° or above × Vertical 55.0° or above × Diagonal 121.0° or above; 3.6mm- Horizontal 84.0° (or above) × Vertical 45.0° or above × Diagonal 100.0° or above; 4 mm- horizontal FOV: 88° (or above), vertical FOV: 46° (or above), diagonal FOV: 105° (or above)					
	Iris Type : Fixed					
	Smart event : Line crossing / Tripwire detection, intrusion detection					
	Video Compression : H.265/H.264					
	Video Frame Rate : Main stream 2688 × 1520 (1 fps-20 fps/25fps) Sub-stream 704 × 576 (1 fps-25 fps)/25 fps (640 × 480)					
	Stream Capability : 2 streams					
	Resolution : (2688 × 1520, 2304 × 1296, 1920 × 1080, 1280 × 720)					
	Video Bit Rate : 32 kbps–6144 kbps/ 32 Kbps to 16 Mbps					
	Day/Night : Yes					
	BLC : Yes					
	HLC : Yes					
	WDR : 120 dB					
	White Balance : yes					
	Noise Reduction : 3D NR					
	Region of Interest (RoI) : Yes (minimum 1 area)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Smart Illumination : yes					
	Image Rotation : yes					
	Mirror : yes					
	Privacy Masking : yes					
	Alarm Event : Motion detection, video tampering alarm, exception (network disconnected, IP address conflict, illegal login, HDD full, HDD error) intrusion detection, line crossing/tripwire detection					
	Network : 1 RJ45 10M/100M self-adaptive Ethernet port					
	Cyber Security : Password protection, encryption, , 802.1X authentication, IP address filtering, Digest, WSSE etc.					
	Protocol : TCP/IP, UDP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnP, SMTP, IGMP, 802.1X, IPv6, UDP, Bonjour, etc.					
	Interoperability : ONVIF (PROFILE S, PROFILE G, PROFILE T)					
	User/Host : at least 20					
	Storage : Micro SD card (support min 128 GB); NAS;FTP					
	Browser : IE, Chrome, Firefox					
	Power Supply : 12 VDC $\pm$ 25%, PoE(802.3 at /af)					
	Power Consumption : max 6 watt					
	Operating Conditions : -30 °C to +60 °C (-22 °F to +140 °F), humidity 95% or less (non-condensing)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Video Frame Rate : Main stream 2688×1520 (1 fps-20 fps/25fps) Sub-stream 704×576 (1 fps-25 fps)/25 fps (640×480)					
	Stream Capability : 2 streams (minimum)					
	Resolution : (2688×1520 , 2304×1296 , 1920×1080 , 1280×720)					
	Video Bit Rate : 32 kbps–6144 kbps/ 32 Kbps to 16 Mbps					
	Day/Night : Yes					
	BLC : Yes					
	HLC : Yes					
	WDR : 120 dB					
	White Balance : yes					
	Noise Reduction : 3D NR					
	Region of Interest (RoI) : Yes (minimum 1 area)					
	Smart Illumination : yes					
	Image Rotation : yes					
	Mirror : yes					
	Privacy Masking : yes					
	Alarm Event : Motion detection, video tampering alarm, exception (network disconnected, IP address conflict, illegal login, HDD full, HDD error) intrusion detection, line crossing/tripwire detection					
	Network : 1 RJ45 10M/100M self-adaptive Ethernet port					
	Cyber Security : Password protection, encryption, , 802.1X authentication, IP address filtering, Digest, WSSE etc.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Protocol : TCP/IP, UDP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnP, SMTP, IGMP, 802.1X, IPv6, UDP, Bonjour, etc.					
	Interoperability : ONVIF (PROFILE S, PROFILE G, PROFILE T)					
	User/Host : at least 20					
	Storage : Micro SD card (support min 128 GB); NAS;FTP					
	Browser : IE, Chrome, Firefox					
	Certifications : CE,FCC					
	Audio Input : 1 channel (RCA port)					
	Audio Output : 1 channel (RCA port)					
	Operating Temperature and humidity : -30 °C to +60 °C (-22 °F to +140 °F), humidity 95% or less (non-condensing)					
	Power Supply : 12 VDC ± 25%, PoE(802.3 at /af)					
	Power Consumption : max 13 watt					
	Protection : IP 67					
	Casing : Metal					
	Certifications : CE,UL,FCC					
	Accepted/ Approved by the Engineer in Charge	Each	12,611.00	12,611.00	12,611.00	12,611.00
15.3	Face Detection Type IP CCTV System & Accessories :Type -C					
15.3.1	Supply and fixing of 16/32/64 Channel (80 TB HDD Capacity) Face Detection Capable Network Video Recorder (NVR) of following technical specification or equivalent :					
	IP video input : 16/32/64 Channel ,Up to 12 MP resolution					
	Two-way audio : 1 Channel Input, 2 Channel Output, RCA					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Incoming bandwidth : 256/320/320 Mbps respectively					
	Outgoing bandwidth : 256 Mbps minimum					
	Remote connection : 128 users					
	Raid Support : RAID0, RAID1, RAID5, RAID10					
	Recording resolution : 12MP, 8MP, 6MP, 5MP, 4MP, 3MP, 1080P, 1.3MP, 720P etc..					
	VGA1 /HDMI1 output resolution : HDMI1: 3840 × 2160 , 1920 × 1080 , 1280 × 1024, 1280 × 720 , 1024 × 768 ; VGA1: 1920 × 1080 , 1280 × 1024, 1280 × 720 , 1024 × 768					
	VGA2 /HDMI2 output resolution : HDMI2/VGA2: 1920 × 1080					
	Decoding format : H.265/H.265+/H.264/H.264+/MPEG4 Audio compression G.711ulaw/ G.711alaw/G.722/ G.726/AAC/ MP2L2/PCM					
	Live view/Playback resolution : 12MP, 8MP, 6MP, 5MP, 4MP, 3MP, 1080p, 1.3MP, 720p and more					
	Synchronous playback : 8-ch minimum					
	Network protocols : HTTP, HTTPS, TCP/IP, IPv4/IPv6, UPnP, SMTP, NTP etc.					
	SATA : 8 SATA interfaces					
	eSATA : 1 eSATA interface					
	Capacity : Up to 10TB capacity for each HDD					
	Array type : RAID 0/1/5/6/10					
	Network interface : 2 RJ-45 Ports (10/100/1000Mbps)					
	Serial interface : RS-232; RS-485;					
	USB interface : Front panel: 2 × USB 2.0; Rear panel: 1 × USB 3.0 (minimum)					
	Alarm in/out : 16/4 or more					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Intelligent Alarm : Facial Detection, Vehicle detection, Line crossing detection, intrusion detection, Region Entrance Detection, Loitering Detection, Fast Moving unattended baggage detection, object removal detection etc..					
	Power supply : Single, AC100V ~ 240V, 50 Hz					
	Consumption (without hard disk) : ≤ 30 W					
	Working temperature : -10°C ~ +55°C (+14°F ~ +131°F), 10 to 90 % (RH)					
	Certifications : CE, UL, FCC					
	Accepted/ Approved by the Engineer in Charge					
15.3.1.1	For 16 Channel	Each	75,666.00	75,666.00	75,666.00	75,666.00
15.3.1.2	For 32 Channel	Each	94,582.00	94,582.00	94,582.00	94,582.00
15.3.1.3	For 64 Channel	Each	113,499.00	113,499.00	113,499.00	113,499.00
15.3.2	Supply and fixing of 2 MP, Fixed-focal, Face Detection Capable, IP Dome CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/2.8" Progressive Scan CMOS, 2 Megapixel (minimum)					
	Min. Illumination : Color: 0.002 Lux @ (F1.4/F1.6), B/W: 0 Lux with IR					
	Shutter Speed : 1/3 s to 1/100,000 s					
	Wide Dynamic Range : 120 dB					
	Angle Adjustment : Pan: 0° to 355°, tilt: 0° to 75°, rotate: 0° to 355°					
	Lens Type and Focal Length : Fixed Focal, 2.8 mm, 3.6mm/4 mm, 6.0 mm					
	Lens Mount : M12/Board in					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Focal Length & FOV : 2.8 mm, horizontal FOV 106°, vertical FOV 57°, 3.6mm~4 mm, horizontal FOV 86° vertical FOV 46°, 6 mm, horizontal FOV 53°, vertical FOV 29° or above Aperture : F1.6 maximum DORI : 2.8 mm: D: 39 m, O: 15 m, R: 8 m, I: 4 m 3.6mm~4 mm: D: 53 m, O: 21 m, R: 10 m, I: 5 m 6 mm: D: 83 m, O: 33 m, R: 17 m, I: 8 m or above Supplement Light Type : IR IR Range : minimum 40 m Max. Resolution : 1920 (H) × 1080 (V) Main Stream : Main Stream: 1080P (1 fps~25/30 fps) Sub-Stream : 50 Hz: 25 fps (640 × 480, 640 × 360) Third Stream : Third Stream: 1080P (1 fps~6 fps) Video Compression : H.265/H.264/H.264+/H.265+/MJPEG (only supported by sub stream) Video Bit Rate : 32 Kbps to 8 Mbps H.264+ : Main stream supports H.265+ : Main stream supports Bit Rate Control : CBR/VBR Region of Interest (ROI) : Off/On (minimum 4 Zone) Environment Noise : Yes Filtering Audio Sampling Rate : 8 kHz/16 kHz/32 kHz/44.1 kHz/48 kHz Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC Simultaneous Live View : Up to 3 channels					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	API : ONVIF (Profile S/Profile G/Profile T)					
	Protocols : TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, NTP, UPnP, SMTP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP,, PPPoE, ARP, SNMP etc.					
	User/Host : minimum 20 Users					
	Network Storage : NAS;FTP;SFTP; Micro SD card 256 GB					
	Web Browser : IE (versions newer than IE8), Chrome, Firefox					
	SNR : ≥ 52 dB					
	Day/Night Switch : Day, Night, Auto, Schedule					
	Image Enhancement : BLC/HLC/WDR (120 dB)					
	Alarm : 1 input, 1 output					
	Audio : 1 input (line in), 1 output (line out)					
	On-Board Storage : Micro SD card up to 256 GB					
	Ethernet Interface : RJ-45 (10/100 Base-T)					
	Basic Event : Motion detection (human and vehicle targets classification), video tampering alarm, exception					
	Smart Event : Face Detection ,Unattended baggage detection, object removal detection, scene change detection, audio exception detection ,Line crossing detection, intrusion detection, region entrance detection, region exiting detection etc.					
	Face Capture : yes					
	Power Supply : DC 12V ($\pm 30\%$), PoE (802.3 at /af)					
	Power Consumption : maximum 9 Watt					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Camera Material : Metal Operating Temperature : -30 °C to 60 °C (-22 °F to 140 °F). and humidity Humidity 95% or less (non-condensing) Protection : IP 67, IK10 Certifications : CE,UL,FCC Accepted/ Approved by the Engineer in Charge	Each	22,857.00	22,857.00	22,857.00	22,857.00
15.3.3	Supply and fixing of 2 MP, Fixed-focal ,Face Detection Capable IP Bullet CAMERA (including lens, bracket, housing) of following technical specification or equivalent : Image Sensor : 1/2.8" Progressive Scan CMOS , 2 Megapixel (minimum) Min. Illumination : Color: 0.002 Lux @ (F1.4/F1.6), B/W: 0 Lux with IR Shutter Speed : 1/3 s to 1/100,000 s Wide Dynamic Range : 120 dB Angle Adjustment : Pan: 0° to 360°, tilt: 0° to 90°, rotate: 0° to 360° Lens Type and Focal Length : Fixed Focal ,2.8 mm, 3.6mm/4 mm, 6.0 mm Lens Mount : M12/Board in Focal Length & FOV : 2.8 mm, horizontal FOV 106°, vertical FOV 57°, 3.6mm~ 4 mm, horizontal FOV 86° vertical FOV 46°, 6 mm, horizontal FOV 53°, vertical FOV 29° or above Aperture : F1.6 maximum					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	DORI : 2.8 mm: D: 39 m, O: 15 m, R: 8 m, I: 4 m 3.6mm~4 mm: D: 53 m, O: 21 m, R: 10 m, I: 5 m 6 mm: D: 83 m, O: 33 m, R: 17 m, I: 8 m or above					
	Supplement Light Type : IR					
	IR Range : minimum 40 m					
	Max. Resolution : 1920 (H) × 1080 (V)					
	Main Stream : Main Stream: 1080P (1 fps~25/30 fps)					
	Sub-Stream : 50 Hz: 25 fps (640 × 480, 640 × 360)					
	Third Stream : Third Stream: 1080P (1 fps~6 fps)					
	Video Compression : H.265/H.264/H.264+/H.265+/MJPEG (only supported by sub stream)					
	Video Bit Rate : 32 Kbps to 8 Mbps					
	H.264+ : Main stream supports					
	H.265+ : Main stream supports					
	Bit Rate Control : CBR/VBR					
	Region of Interest (ROI) : Off/On (minimum 4 Zone)					
	Environment Noise : Yes					
	Filtering					
	Audio Sampling Rate : 8 kHz/16 kHz/32 kHz/44.1 kHz/48 kHz					
	Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC					
	Simultaneous Live View : Up to 3 channels					
	API : ONVIF (Profile S/Profile G/Profile T)					
	Protocols : TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, NTP, UPnP, SMTP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP,, PPPoE, ARP, SNMP etc.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	User/Host : minimum 20 Users	Each	23,330.00	23,330.00	23,330.00	23,330.00
	Network Storage : NAS;FTP;SFTP; Micro SD card 256 GB					
	Web Browser : IE (versions newer than IE8), Chrome, Firefox					
	SNR : ≥ 52 dB					
	Day/Night Switch : Day, Night, Auto, Schedule					
	Image Enhancement : BLC/HLC/WDR (120 dB)					
	Alarm : 1 input, 1 output					
	Audio : 1 input (line in), 1 output (line out)					
	On-Board Storage : Micro SD card up to 256 GB					
	Ethernet Interface : RJ-45 (10/100 Base-T)					
	Basic Event : Motion detection (human and vehicle targets classification), video tampering alarm, exception					
	Smart Event : Face Detection ,Unattended baggage detection, object removal detection, scene change detection, audio exception detection ,Line crossing detection, intrusion detection, region entrance detection, region exiting detection etc.					
	Face Capture : yes					
	Power Supply : DC 12V ($\pm 30\%$), PoE (802.3 at /af)					
	Power Consumption : maximum 12 Watt					
	Camera Material : Metal					
	Operating Temperature and humidity : -30 °C to 60 °C (-22 °F to 140 °F). Humidity 95% or less (non-condensing)					
	Protection : IP 67, IK10					
	Certifications : CE,UL,FCC					
	Accepted/ Approved by the Engineer in Charge					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
15.3.4	Supply and fixing of 4 MP, Fixed-focal ,Face Detection Capable IP Dome CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/3" or above 4 Megapixel (minimum) Progressive Scan CMOS					
	Min. Illumination : Color: 0.002 Lux @ (F1.4/F1.6), B/W: 0 Lux with IR					
	Shutter Speed : 1/3 s to 1/100,000 s					
	Wide Dynamic Range : 120 dB or above					
	Angle Adjustment : Pan: 0° to 355°, tilt: 0° to 75°, rotate: 0° to 355°					
	Lens Type and Focal Length : Fixed Focal, 2.8 mm, 3.6mm/4 mm, 6.0 mm					
	Lens Mount : M12/Board in					
	Focal Length & FOV : 2.8 mm, horizontal FOV 103°, vertical FOV 55°, 3.6mm~ 4 mm, horizontal FOV 83° vertical FOV 45°, 6 mm, horizontal FOV 53°, vertical FOV 28° or above					
	Aperture : F1.6 maximum					
	DORI : 2.8 mm: D: 58 m, O: 23 m, R: 12 m, I: 6 m 3.6mm~4 mm: D: 72 m, O: 29 m, R: 14 m, I: 7 m 6 mm: D: 113 m, O: 45 m, R: 23 m, I: 11 m					
	Supplement Light Type : IR					
	IR Range : minimum 40 m					
	Max. Resolution : 2688 (H) × 1520 (V)					
	Main Stream : Main Stream: 2688 × 1520 (1 fps~25/30 fps)					
	Sub-Stream : 50 Hz: 25 fps (640 × 480, 640 × 360)					
	Third Stream : Third Stream: 1080P (1 fps~10fps)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Video Compression : H.265/H.264/H.264+/H.265+/MJPEG (only supported by sub stream)					
	Video Bit Rate : 32 Kbps to 8 Mbps					
	H.264+ : Main stream supports					
	H.265+ : Main stream supports					
	Bit Rate Control : CBR/VBR					
	Region of Interest (ROI) : Off/On (minimum 4 Zone)					
	Environment Noise : Yes					
	Filtering					
	Audio Sampling Rate : 8 kHz/16 kHz/32 kHz/44.1 kHz/48 kHz					
	Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC					
	Simultaneous Live View : Up to 3 channels					
	API : ONVIF (Profile S/Profile G/Profile T)					
	Protocols : TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, NTP, UPnP, SMTP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP,, PPPoE, ARP, SNMP etc.					
	User/Host : minimum 20 Users					
	Network Storage : NAS;FTP;SFTP; Micro SD card 256 GB					
	Web Browser : IE (versions newer than IE8), Chrome, Firefox					
	SNR : ≥ 52 dB					
	Day/Night Switch : Day, Night, Auto, Schedule					
	Image Enhancement : BLC/HLC/WDR (120 dB)					
	Alarm : 1 input, 1 output					
	Audio : 1 input (line in), 1 output (line out)					
	On-Board Storage : Micro SD card up to 256 GB					
	Ethernet Interface : RJ-45 (10/100 Base-T)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Basic Event : Motion detection (human and vehicle targets classification), video tampering alarm, exception	Each	23,646.00	23,646.00	23,646.00	23,646.00
	Smart Event : Face Detection ,Unattended baggage detection, object removal detection, scene change detection, audio exception detection ,Line crossing detection, intrusion detection, region entrance detection, region exiting detection etc.					
	Face Capture : yes					
	Power Supply : DC 12V (±30%), PoE (802.3 at /af)					
	Power Consumption : maximum 9 w					
	Camera Material : Metal					
	Operating Temperature and humidity : -30 °C to 60 °C (-22 °F to 140 °F). Humidity 95% or less (non-condensing)					
	Protection : IP 67, IK10					
	Certifications : CE,UL,FCC					
	Accepted/ Approved by the Engineer in Charge					
15.3.5	Supply and fixing of 4 MP, Fixed-focal ,Face Detection Capable IP Bullet CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/3" or above 4 Megapixel (minimum) Progressive Scan CMOS					
	Min. Illumination : Color: 0.002 Lux @ (F1.4/F1.6), B/W: 0 Lux with IR					
	Shutter Speed : 1/3 s to 1/100,000 s					
	Wide Dynamic Range : 120 dB or above					
	Angle Adjustment : Pan: 0° to 360°, tilt: 0° to 90°, rotate: 0° to 360°					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC					
	Simultaneous Live View : Up to 3 channels					
	API : ONVIF (Profile S/Profile G/Profile T)					
	Protocols : TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, NTP, UPnP, SMTP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP,, PPPoE, ARP, SNMP etc.					
	User/Host : minimum 20 Users					
	Network Storage : NAS;FTP;SFTP; Micro SD card 256 GB					
	Web Browser : IE (versions newer than IE8), Chrome, Firefox					
	SNR : ≥ 52 dB					
	Day/Night Switch : Day, Night, Auto, Schedule					
	Image Enhancement : BLC/HLC/WDR (120 dB)					
	Alarm : 1 input, 1 output					
	Audio : 1 input (line in), 1 output (line out)					
	On-Board Storage : Micro SD card up to 256 GB					
	Ethernet Interface : RJ-45 (10/100 Base-T)					
	Basic Event : Motion detection (human and vehicle targets classification), video tampering alarm, exception					
	Smart Event : Face Detection ,Unattended baggage detection, object removal detection, scene change detection, audio exception detection ,Line crossing detection, intrusion detection, region entrance detection, region exiting detection etc.					
	Face Capture : yes					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
15.3.6	Power Supply : DC 12V ($\pm 30\%$), PoE (802.3 at /af)	Each	23,646.00	23,646.00	23,646.00	23,646.00
	Power Consumption : maximum 12 Watt					
	Camera Material : Metal					
	Operating Temperature : -30 °C to 60 °C (-22 °F to 140 °F).					
	and humidity Humidity 95% or less (non-condensing)					
	Protection : IP 67, IK10					
	Certifications : CE,UL,FCC					
	Accepted/ Approved by the Engineer in Charge					
	Supply and fixing of 5 MP, Fixed-focal ,Face Detection Capable IP Dome CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/2.7" 5 Megapixel (minimum)progressive Scan CMOS					
	Min. Illumination : Color: 0.005 Lux @ (F1.4/F1.6), B/W: 0 Lux with IR					
	Shutter Speed : 1/3 s to 1/100,000 s					
	Wide Dynamic Range : 120 dB					
	Angle Adjustment : Pan: 0° to 355°, tilt: 0° to 75°, rotate: 0° to 355°					
	Lens Type and Focal Length : Fixed Focal ,2.8 mm, 3.6mm/4 mm, 6.0 mm					
	Lens Mount : M12/Board in					
	Focal Length & FOV : 2.8 mm, horizontal FOV 98°, vertical FOV 71°, 3.6mm~ 4 mm, horizontal FOV 80° vertical FOV 58°, 6 mm, horizontal FOV 51°, vertical FOV 37° or above					
	Aperture : F1.6 maximum					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	DORI : 2.8 mm: D: 56m, O: 22 m, R: 11 m, I: 6 m 3.6mm~4 mm: D: 77 m, O: 30 m, R: 15 m, I: 7 m 6 mm: D: 120 m, O: 48 m, R: 24 m, I: 12					
	Supplement Light Type : IR					
	IR Range : minimum 40 m					
	Max. Resolution : 2592 × 1944					
	Main Stream : Main Stream: 2592 × 1944 (1 fps–20 fps)					
	Sub-Stream : 50 Hz: 25 fps (640 × 480, 640 × 360)					
	Third Stream : Third Stream: 1080P (1 fps–10 fps)					
	Video Compression : H.265/H.264/H.264+/H.265+/MJPEG (only supported by sub stream)					
	Video Bit Rate : 32 Kbps to 8 Mbps					
	H.264+ : Main stream supports					
	H.265+ : Main stream supports					
	Bit Rate Control : CBR/VBR					
	Region of Interest (ROI) : Off/On (minimum 4 Zone)					
	Environment Noise : Yes					
	Filtering					
	Audio Sampling Rate : 8 kHz/16 kHz/32 kHz/44.1 kHz/48 kHz					
	Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC					
	Simultaneous Live View : Up to 3 channels					
	API : ONVIF (Profile S/Profile G/Profile T)					
	Protocols : TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, NTP, UPnP, SMTP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP,, PPPoE, ARP, SNMP etc.					
	User/Host : minimum 20 Users					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Network Storage : NAS;FTP;SFTP; Micro SD card 256 GB	Each	25,222.00	25,222.00	25,222.00	25,222.00
	Web Browser : IE (versions newer than IE8), Chrome, Firefox					
	SNR : ≥ 52 dB					
	Day/Night Switch : Day, Night, Auto, Schedule					
	Image Enhancement : BLC/HLC/WDR (120 dB)					
	Alarm : 1 input, 1 output					
	Audio : 1 input (line in), 1 output (line out)					
	On-Board Storage : Micro SD card up to 256 GB					
	Ethernet Interface : RJ-45 (10/100 Base-T)					
	Basic Event : Motion detection (human and vehicle targets classification), video tampering alarm, exception					
	Smart Event : Face Detection ,Unattended baggage detection, object removal detection, scene change detection, audio exception detection ,Line crossing detection, intrusion detection, region entrance detection, region exiting detection etc.					
	Face Capture : yes					
	Power Supply : DC 12V ($\pm 30\%$), PoE (802.3 at /af)					
	Power Consumption : maximum 9 Watt					
	Camera Material : Metal					
	Operating Temperature and humidity : -30 °C to 60 °C (-22 °F to 140 °F). Humidity 95% or less (non-condensing)					
	Protection : IP 67, IK10					
	Certifications : CE,UL,FCC					
	Accepted/ Approved by the Engineer in Charge	Each	25,222.00	25,222.00	25,222.00	25,222.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
15.3.7	Supply and fixing of 5 MP, Fixed-focal ,Face Detection Capable IP Bullet CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/2.7" 5 Megapixel (minimum)progressive Scan CMOS					
	Min. Illumination : Color: 0.005 Lux @ (F1.4/F1.6), B/W: 0 Lux with IR					
	Shutter Speed : 1/3 s to 1/100,000 s					
	Wide Dynamic Range : 120 dB					
	Angle Adjustment : Pan: 0° to 360°, tilt: 0° to 90°, rotate: 0° to 360°					
	Lens Type and Focal Length : Fixed Focal, 2.8 mm, 3.6mm/4 mm, 6.0 mm					
	Lens Mount : M12/Board in					
	Focal Length & FOV : 2.8 mm, horizontal FOV 98°, vertical FOV 71°, 3.6mm~ 4 mm, horizontal FOV 80° vertical FOV 58°, 6 mm, horizontal FOV 51°, vertical FOV 37° or above					
	Aperture : F1.6 maximum					
	DORI : 2.8 mm: D: 56m, O: 22 m, R: 11 m, I: 6 m 3.6mm~4 mm: D: 77 m, O: 30 m, R: 15 m, I: 7 m 6 mm: D: 120 m, O: 48 m, R: 24 m, I: 12					
	Supplement Light Type : IR					
	IR Range : minimum 40 m					
	Max. Resolution : 2592 × 1944					
	Main Stream : Main Stream: 2592 × 1944 (1 fps–20 fps)					
	Sub-Stream : 50 Hz: 25 fps (640 × 480, 640 × 360)					
	Third Stream : Third Stream: 1080P (1 fps–10 fps)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Video Compression : H.265/H.264/H.264+/H.265+/MJPEG (only supported by sub stream)					
	Video Bit Rate : 32 Kbps to 8 Mbps					
	H.264+ : Main stream supports					
	H.265+ : Main stream supports					
	Bit Rate Control : CBR/VBR					
	Region of Interest (ROI) : Off/On (minimum 4 Zone)					
	Environment Noise : Yes					
	Filtering					
	Audio Sampling Rate : 8 kHz/16 kHz/32 kHz/44.1 kHz/48 kHz					
	Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC					
	Simultaneous Live View : Up to 3 channels					
	API : ONVIF (Profile S/Profile G/Profile T)					
	Protocols : TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, NTP, UPnP, SMTP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP,, PPPoE, ARP, SNMP etc.					
	User/Host : minimum 20 Users					
	Network Storage : NAS;FTP;SFTP; Micro SD card 256 GB					
	Web Browser : IE (versions newer than IE8), Chrome, Firefox					
	SNR : ≥ 52 dB					
	Day/Night Switch : Day, Night, Auto, Schedule					
	Image Enhancement : BLC/HLC/WDR (120 dB)					
	Alarm : 1 input, 1 output					
	Audio : 1 input (line in), 1 output (line out)					
	On-Board Storage : Micro SD card up to 256 GB					
	Ethernet Interface : RJ-45 (10/100 Base-T)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Basic Event : Motion detection (human and vehicle targets classification), video tampering alarm, exception					
	Smart Event : Face Detection ,Unattended baggage detection, object removal detection, scene change detection, audio exception detection ,Line crossing detection, intrusion detection, region entrance detection, region exiting detection etc.					
	Face Capture : yes					
	Power Supply : DC 12V (±30%), PoE (802.3 at /af)					
	Power Consumption : maximum 12 Watt					
	Camera Material : Metal					
	Operating Temperature : -30 °C to 60 °C (-22 °F to 140 °F).					
	and humidity Humidity 95% or less (non-condensing)					
	Protection : IP 67, IK10					
	Certifications : CE,UL,FCC					
	Accepted/ Approved by the Engineer in Charge	Each	25,222.00	25,222.00	25,222.00	25,222.00
15.3.8	Supply and fixing of 2 MP, Motorized varifocal ,Face Detection Capable, IP Dome CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/2.8" Progressive Scan CMOS , 2 Megapixel (minimum)					
	: Color: 0.002 Lux @ (F1.4/F1.5), B/W: 0					
	Min. Illumination Lux with IR					
	Shutter Speed : 1/3 s to 1/100,000 s					
	Wide Dynamic Range : 120 dB					
	Angle Adjustment : Pan: 0° to 355°, tilt: 0° to 75°, rotate: 0° to 355°					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Lens Type and Focal Length : Varifocal lens, motor-driven lens, 2.7 to 13.5 mm Lens Mount : Ø14/Board in Focal Length & FOV : horizontal FOV 109°–30°, vertical FOV : 57°–17° or above Aperture : F1.5 maximum DORI : 2.7 to 13.5 mm: D: 44 to 129 m, O: 17 to 51 m, R: 8 to 25 m, I: 4 to 13 m or above Supplement Light Type : IR IR Range : minimum 40 m Max. Resolution : 1920 (H) × 1080 (V) Main Stream : Main Stream: 1080P (1 fps–25/30 fps) Sub-Stream : 50 Hz: 25 fps (640 × 480, 640 × 360) Third Stream : Third Stream: 1080P (1 fps–6 fps) Video Compression : H.265/H.264/H.264+/H.265+/MJPEG (only supported by sub stream) Video Bit Rate : 32 Kbps to 8 Mbps H.264+ : Main stream supports H.265+ : Main stream supports Bit Rate Control : CBR/VBR Region of Interest (ROI) : Off/On (minimum 4 Zone) Environment Noise : Yes Filtering : Audio Sampling Rate : 8 kHz/16 kHz/32 kHz/44.1 kHz/48 kHz Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC Simultaneous Live View : Up to 3 channels API : ONVIF (Profile S/Profile G/Profile T)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Protocols : TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, NTP, UPnP, SMTP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP,, PPPoE, ARP, SNMP etc.					
	User/Host : minimum 20 Users					
	Network Storage : NAS;FTP;SFTP; Micro SD card 256 GB					
	Web Browser : IE (versions newer than IE8), Chrome, Firefox					
	SNR : ≥ 52 dB					
	Day/Night Switch : Day, Night, Auto, Schedule					
	Image Enhancement : BLC/HLC/WDR (120 dB)					
	Alarm : 1 input, 1 output					
	Audio : 1 input (line in), 1 output (line out)					
	On-Board Storage : Micro SD card up to 256 GB					
	Ethernet Interface : RJ-45 (10/100 Base-T)					
	Basic Event : Motion detection (human and vehicle targets classification), video tampering alarm, exception					
	Smart Event : Face Detection ,Unattended baggage detection, object removal detection, scene change detection, audio exception detection ,Line crossing detection, intrusion detection, region entrance detection, region exiting detection etc.					
	Face Capture : yes					
	Power Supply : DC 12V ($\pm 30\%$), PoE (802.3 at /af)					
	Power Consumption : maximum 13 Watt					
	Camera Material : Metal					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Operating Temperature : -30 °C to 60 °C (-22 °F to 140 °F). and humidity Humidity 95% or less (non-condensing)					
	Protection : IP 67, IK10 Certifications : CE,UL,FCC Accepted/ Approved by the Engineer in Charge	Each	34,050.00	34,050.00	34,050.00	34,050.00
15.3.9	Supply and fixing of 2 MP, Motorized varifocal ,Face Detection Capable, IP Bullet CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/2.8" Progressive Scan CMOS , 2 Megapixel (minimum) : Color: 0.002 Lux @ (F1.4/F1.5), B/W: 0					
	Min. Illumination : Lux with IR					
	Shutter Speed : 1/3 s to 1/100,000 s					
	Wide Dynamic Range : 120 dB					
	Angle Adjustment : Pan: 0° to 355°, tilt: 0° to 90°, rotate: 0° to 360°					
	Lens Type and Focal Length : Varifocal lens, motor-driven lens, 2.7 to 13.5 mm					
	Lens Mount : Ø14/Board in					
	Focal Length & FOV : horizontal FOV 109°–30°, vertical FOV : 57°–17° or above					
	Aperture : F1.5 maximum					
	DORI : 2.7 to 13.5 mm: D: 44 to 129 m, O: 17 to 51 m, R: 8 to 25 m, I: 4 to 13 m or above					
	Supplement Light Type : IR					
	IR Range : minimum 50 m					
	Max. Resolution : 1920 (H) × 1080 (V)					
	Main Stream : Main Stream: 1080P (1 fps–25/30 fps)					
	Sub-Stream : 50 Hz: 25 fps (640 × 480, 640 × 360)					
	Third Stream : Third Stream: 1080P (1 fps–6 fps)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Video Compression : H.265/H.264/H.264+/H.265+/MJPEG (only supported by sub stream)					
	Video Bit Rate : 32 Kbps to 8 Mbps					
	H.264+ : Main stream supports					
	H.265+ : Main stream supports					
	Bit Rate Control : CBR/VBR					
	Region of Interest (ROI) : Off/On (minimum 4 Zone)					
	Environment Noise : Yes					
	Filtering					
	Audio Sampling Rate : 8 kHz/16 kHz/32 kHz/44.1 kHz/48 kHz					
	Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC					
	Simultaneous Live View : Up to 3 channels					
	API : ONVIF (Profile S/Profile G/Profile T)					
	Protocols : TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, NTP, UPnP, SMTP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP,, PPPoE, ARP, SNMP etc.					
	User/Host : minimum 20 Users					
	Network Storage : NAS;FTP;SFTP; Micro SD card 256 GB					
	Web Browser : IE (versions newer than IE8), Chrome, Firefox					
	SNR : ≥ 52 dB					
	Day/Night Switch : Day, Night, Auto, Schedule					
	Image Enhancement : BLC/HLC/WDR (120 dB)					
	Alarm : 1 input, 1 output					
	Audio : 1 input (line in), 1 output (line out)					
	On-Board Storage : Micro SD card up to 256 GB					
	Ethernet Interface : RJ-45 (10/100 Base-T)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Basic Event : Motion detection (human and vehicle targets classification), video tampering alarm, exception	Each	34,050.00	34,050.00	34,050.00	34,050.00
	Smart Event : Face Detection ,Unattended baggage detection, object removal detection, scene change detection, audio exception detection ,Line crossing detection, intrusion detection, region entrance detection, region exiting detection etc.					
	Face Capture : yes					
	Power Supply : DC 12V (±30%), PoE (802.3 at /af)					
	Power Consumption : maximum 15 Watt					
	Camera Material : Metal					
	Operating Temperature and humidity : -30 °C to 60 °C (-22 °F to 140 °F). Humidity 95% or less (non-condensing)					
	Protection : IP 67, IK10					
	Certifications : CE,UL,FCC					
	Accepted/ Approved by the Engineer in Charge					
15.3.10	Supply and fixing of 4 MP, Motorized varifocal ,Face Detection Capable, IP Dome CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/1.8" Progressive Scan CMOS , 4 Megapixel (minimum) : Color: 0.003 Lux @ (F1.4/F1.8), B/W: 0 Lux with IR					
	Min. Illumination					
	Shutter Speed : 1/3 s to 1/100,000 s					
	Wide Dynamic Range : 140 dB					
	Angle Adjustment : Pan: 0° to 355°, tilt: 0° to 65°, rotate: 0° to 355°					
	Lens Type and Focal Length : Varifocal lens, motor-driven lens, 2.7 to 12 mm					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Lens Mount : Ø14/Board in/integrated					
	Focal Length & FOV : horizontal FOV 114°–41°, vertical FOV : 59°–23° or above					
	Aperture : F1.8 maximum					
	DORI : 2.7 to 12 mm: D: 61 to 131 m, O: 23 to 52 m, R: 12 to 26 m, I: 6 to 13 m or above					
	Supplement Light Type : IR					
	IR Range : minimum 40 m					
	Max. Resolution : 2688 (H) × 1520 (V)					
	Main Stream : Main Stream: 2688 × 1520 (1 fps–25/30 fps)					
	Sub-Stream : 50 Hz: 25 fps (640 × 480, 640 × 360)					
	Third Stream : Third Stream: 1080P (1 fps–16 fps) or 720p 15fps					
	Video Compression : H.265/H.264/H.264+/H.265+/MJPEG (only supported by sub stream)					
	Video Bit Rate : 32 Kbps to 8 Mbps					
	H.264+ : Main stream supports					
	H.265+ : Main stream supports					
	Bit Rate Control : CBR/VBR					
	Region of Interest (ROI) : Off/On (minimum 4 Zone)					
	Environment Noise : Yes					
	Filtering					
	Audio Sampling Rate : 8 kHz/16 kHz/32 kHz/44.1 kHz/48 kHz					
	Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC					
	Simultaneous Live View : Up to 3 channels					
	API : ONVIF (Profile S/Profile G/Profile T)					

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Rev

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Protocols : TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, NTP, UPnP, SMTP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP,, PPPoE, ARP, SNMP etc.					
	User/Host : minimum 20 Users					
	Network Storage : NAS;FTP;SFTP; Micro SD card 256 GB					
	Web Browser : IE (versions newer than IE8), Chrome, Firefox					
	SNR : ≥ 52 dB					
	Day/Night Switch : Day, Night, Auto, Schedule					
	Image Enhancement : BLC/HLC/WDR (140 dB)					
	Alarm : 1 input, 1 output					
	Audio : 1 input (line in), 1 output (line out)					
	On-Board Storage : Micro SD card up to 256 GB					
	Ethernet Interface : RJ-45 (10/100 Base-T)					
	Basic Event : Motion detection (human and vehicle targets classification), video tampering alarm, exception					
	Smart Event : Face Detection ,Unattended baggage detection, object removal detection, scene change detection, audio exception detection ,Line crossing detection, intrusion detection, region entrance detection, region exiting detection etc.					
	Face Capture : yes					
	Power Supply : DC 12V ($\pm 30\%$), PoE (802.3 at /af)					
	Power Consumption : maximum 13 Watt					
	Camera Material : Metal					

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Rev

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Operating Temperature : -30 °C to 60 °C (-22 °F to 140 °F). and humidity Humidity 95% or less (non-condensing)					
	Protection : IP 67, IK10 Certifications : CE,UL,FCC Accepted/ Approved by the Engineer in Charge	Each	37,833.00	37,833.00	37,833.00	37,833.00
15.3.11	Supply and fixing of 4 MP, Motorized varifocal ,Face Detection Capable, IP Bullet CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/1.8" Progressive Scan CMOS , 4 Megapixel (minimum) : Color: 0.003 Lux @ (F1.4/F1.8), B/W: 0					
	Min. Illumination : Lux with IR					
	Shutter Speed : 1/3 s to 1/100,000 s					
	Wide Dynamic Range : 140 dB					
	Angle Adjustment : Pan: 0° to 360°, tilt: 0° to 90°, rotate: 0° to 360°					
	Lens Type and Focal Length : Varifocal lens, motor-driven lens, 2.7 to 12 mm					
	Lens Mount : Ø14/Board in/integrated					
	Focal Length & FOV : horizontal FOV 114°–41°, vertical FOV : 59°–23° or above					
	Aperture : F1.8 maximum					
	DORI : 2.7 to 12 mm: D: 61 to 131 m, O: 23 to 52 m, R: 12 to 26 m, I: 6 to 13 m or above					
	Supplement Light Type : IR					
	IR Range : minimum 40 m					
	Max. Resolution : 2688 (H) × 1520 (V)					
	Main Stream : Main Stream: 2688 × 1520 (1 fps–25/30 fps)					
	Sub-Stream : 50 Hz: 25 fps (640 × 480, 640 × 360)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Third Stream : Third Stream: 1080P (1 fps–10 fps)					
	Video Compression : H.265/H.264/H.264+/H.265+/MJPEG (only supported by sub stream)					
	Video Bit Rate : 32 Kbps to 8 Mbps					
	H.264+ : Main stream supports					
	H.265+ : Main stream supports					
	Bit Rate Control : CBR/VBR					
	Region of Interest (ROI) : Off/On (minimum 4 Zone)					
	Environment Noise : Yes					
	Filtering					
	Audio Sampling Rate : 8 kHz/16 kHz/32 kHz/44.1 kHz/48 kHz					
	Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC					
	Simultaneous Live View : Up to 3 channels					
	API : ONVIF (Profile S/Profile G/Profile T)					
	Protocols : TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, NTP, UPnP, SMTP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP,, PPPoE, ARP, SNMP etc.					
	User/Host : minimum 20 Users					
	Network Storage : NAS;FTP;SFTP; Micro SD card 256 GB					
	Web Browser : IE (versions newer than IE8), Chrome, Firefox					
	SNR : ≥ 52 dB					
	Day/Night Switch : Day, Night, Auto, Schedule					
	Image Enhancement : BLC/HLC/WDR (140 dB)					
	Alarm : 1 input, 1 output					
	Audio : 1 input (line in), 1 output (line out)					
	On-Board Storage : Micro SD card up to 256 GB					

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Rev

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Ethernet Interface : RJ-45 (10/100 Base-T)	Each	37,833.00	37,833.00	37,833.00	37,833.00
	Basic Event : Motion detection (human and vehicle targets classification), video tampering alarm, exception					
	Smart Event : Face Detection ,Unattended baggage detection, object removal detection, scene change detection, audio exception detection ,Line crossing detection, intrusion detection, region entrance detection, region exiting detection etc.					
	Face Capture : yes					
	Power Supply : DC 12V (±30%), PoE (802.3 at /af)					
	Power Consumption : maximum 15 Watt					
	Camera Material : Metal					
	Operating Temperature : -30 °C to 60 °C (-22 °F to 140 °F).					
	and humidity Humidity 95% or less (non-condensing)					
	Protection : IP 67, IK10					
	Certifications : CE,UL,FCC					
	Accepted/ Approved by the Engineer in Charge					
15.3.12	Supply and fixing of 5 MP, Motorized varifocal ,Face Detection Capable, IP Dome CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/2.7" Progressive Scan CMOS , 5 Megapixel (minimum)					
	: Color: 0.005 Lux @ (F1.4/F1.5), B/W: 0 Lux with IR					
	Min. Illumination					
	Shutter Speed : 1/3 s to 1/100,000 s					
	Wide Dynamic Range : 120 dB					
	Angle Adjustment : Pan: 0°–355°; Tilt: 0°–65°; Rotation: 0°–355°					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Lens Type and Focal Length : Varifocal lens, motor-driven lens, 2.7 to 13.5 mm					
	Lens Mount : Ø14/Board in					
	Focal Length & FOV : horizontal FOV 100°–28°, vertical FOV : 72°–21° or above					
	Aperture : F1.5 maximum					
	DORI : 2.7 to 13.5 mm: D: 64 to 187 m, O: 25 to 74 m, R: 13 to 40 m, I: 6 to 18 m or above					
	Supplement Light Type : IR					
	IR Range : minimum 40 m					
	Max. Resolution : 2592 × 1944					
	Main Stream : Main Stream: 2592 × 1944 (1 fps–20 fps)					
	Sub-Stream : 50 Hz: 25 fps (640 × 480, 640 × 360)					
	Third Stream : Third Stream: 1080P (1 fps–10 fps)					
	Video Compression : H.265/H.264/H.264+/H.265+/MJPEG (only supported by sub stream)					
	Video Bit Rate : 32 Kbps to 8 Mbps					
	H.264+ : Main stream supports					
	H.265+ : Main stream supports					
	Bit Rate Control : CBR/VBR					
	Region of Interest (ROI) : Off/On (minimum 4 Zone)					
	Environment Noise : Yes					
	Filtering					
	Audio Sampling Rate : 8 kHz/16 kHz/32 kHz/44.1 kHz/48 kHz					
	Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC					
	Simultaneous Live View : Up to 3 channels					
	API : ONVIF (Profile S/Profile G/Profile T)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Protocols : TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, NTP, UPnP, SMTP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP,, PPPoE, ARP, SNMP etc.					
	User/Host : minimum 20 Users					
	Network Storage : NAS;FTP;SFTP; Micro SD card 256 GB					
	Web Browser : IE (versions newer than IE8), Chrome, Firefox					
	SNR : ≥ 52 dB					
	Day/Night Switch : Day, Night, Auto, Schedule					
	Image Enhancement : BLC/HLC/WDR (120 dB)					
	Alarm : 1 input, 1 output					
	Audio : 1 input (line in), 1 output (line out)					
	On-Board Storage : Micro SD card up to 256 GB					
	Ethernet Interface : RJ-45 (10/100 Base-T)					
	Basic Event : Motion detection (human and vehicle targets classification), video tampering alarm, exception					
	Smart Event : Face Detection ,Unattended baggage detection, object removal detection, scene change detection, audio exception detection ,Line crossing detection, intrusion detection, region entrance detection, region exiting detection etc.					
	Face Capture : yes					
	Power Supply : DC 12V ($\pm 30\%$), PoE (802.3 at /af)					
	Power Consumption : maximum 13 Watt					
	Camera Material : Metal					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Operating Temperature : -30 °C to 60 °C (-22 °F to 140 °F). and humidity Humidity 95% or less (non-condensing)					
	Protection : IP 67, IK10 Certifications : CE, UL, FCC Accepted/ Approved by the Engineer in Charge	Each	41,616.00	41,616.00	41,616.00	41,616.00
15.3.13	Supply and fixing of 5 MP, Motorized varifocal ,Face Detection Capable, IP Dome CAMERA (including lens, bracket, housing) of following technical specification or equivalent : Image Sensor : 1/2.7" Progressive Scan CMOS , 5 Megapixel (minimum) : Color: 0.005 Lux @ (F1.4/F1.5), B/W: 0 Min. Illumination Lux with IR Shutter Speed : 1/3 s to 1/100,000 s Wide Dynamic Range : 120 dB Angle Adjustment : Pan: 0°–355°; Tilt: 0°–65°; Rotation: 0°–355° Lens Type and Focal Length : Varifocal lens, motor-driven lens, 2.7 to 13.5 mm Lens Mount : Ø14/Board in Focal Length & FOV : horizontal FOV 100°–28°, vertical FOV : 72°–21° or above Aperture : F1.5 maximum DORI : 2.7 to 13.5 mm: D: 64 to 187 m, O: 25 to 74 m, R: 13 to 40 m, I: 6 to 18 m or above Supplement Light Type : IR IR Range : minimum 40 m Max. Resolution : 2592 × 1944 Main Stream : Main Stream: 2592 × 1944 (1 fps–20 fps) Sub-Stream : 50 Hz: 25 fps (640 × 480, 640 × 360) Third Stream : Third Stream: 1080P (1 fps–10 fps)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Video Compression : H.265/H.264/H.264+/H.265+/MJPEG (only supported by sub stream)					
	Video Bit Rate : 32 Kbps to 8 Mbps					
	H.264+ : Main stream supports					
	H.265+ : Main stream supports					
	Bit Rate Control : CBR/VBR					
	Region of Interest (ROI) : Off/On (minimum 4 Zone)					
	Environment Noise : Yes					
	Filtering					
	Audio Sampling Rate : 8 kHz/16 kHz/32 kHz/44.1 kHz/48 kHz					
	Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC					
	Simultaneous Live View : Up to 3 channels					
	API : ONVIF (Profile S/Profile G/Profile T)					
	Protocols : TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, NTP, UPnP, SMTP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP,, PPPoE, ARP, SNMP etc.					
	User/Host : minimum 20 Users					
	Network Storage : NAS;FTP;SFTP; Micro SD card 256 GB					
	Web Browser : IE (versions newer than IE8), Chrome, Firefox					
	SNR : ≥ 52 dB					
	Day/Night Switch : Day, Night, Auto, Schedule					
	Image Enhancement : BLC/HLC/WDR (120 dB)					
	Alarm : 1 input, 1 output					
	Audio : 1 input (line in), 1 output (line out)					
	On-Board Storage : Micro SD card up to 256 GB					
	Ethernet Interface : RJ-45 (10/100 Base-T)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Basic Event : Motion detection (human and vehicle targets classification), video tampering alarm, exception	Each	41,616.00	41,616.00	41,616.00	41,616.00
	Smart Event : Face Detection ,Unattended baggage detection, object removal detection, scene change detection, audio exception detection ,Line crossing detection, intrusion detection, region entrance detection, region exiting detection etc.					
	Face Capture : yes					
	Power Supply : DC 12V (±30%), PoE (802.3 at /af)					
	Power Consumption : maximum 13 Watt					
	Camera Material : Metal					
	Operating Temperature and humidity : -30 °C to 60 °C (-22 °F to 140 °F). Humidity 95% or less (non-condensing)					
	Protection : IP 67, IK10					
	Certifications : CE,UL,FCC					
	Accepted/ Approved by the Engineer in Charge					
15.3.14	Supply and fixing of 2 MP, face detection capable Indoor PTZ CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/2.8" Progressive Scan CMOS , 2 Megapixel (minimum) : Color: 0.005 Lux @ (F1.6/F1.5), B/W: 0					
	Min. Illumination : Lux with IR					
	Shutter Speed : 1/3 s to 1/30,000 s					
	Wide Dynamic Range : 120 dB					
	Focal Length : 2.8 to 11 mm					
	Optical Zoom : 4x					
	Digital Zoom : 16x					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Focal Length & FOV : horizontal FOV 100°–30°, vertical FOV : 52°–18° or above					
	Aperture : F1.6 maximum					
	DORI : D: 120 m , O: 48 m , R: 24 m I: 12 m					
	Supplement Light Type : IR					
	IR Range : minimum 20 m					
	Pan/Tilt range : 0°~355° ; 0°~90°					
	Pan speed : 0°~100° , preset speed :100°/s					
	Tilt speed : 0°~60° , preset speed :60°/s					
	Presets : 300					
	Max. Resolution : 1920x1080					
	Main Stream : Main Stream: 1920x1080 (1 fps–25 fps)					
	Sub-Stream : 50 Hz: 25 fps (704x576)					
	Third Stream : Third Stream: 1280x720 (1 fps–25 fps)					
	Video Compression : H.265/H.264/H.264+/H.265+/MJPEG (only supported by sub stream)					
	Video Bit Rate : 32 Kbps to 8 Mbps					
	H.264+ : Main stream supports					
	H.265+ : Main stream supports					
	Bit Rate Control : CBR/VBR					
	Region of Interest (ROI) : Off/On (minimum 4 Zone)					
	Environment Noise : Yes					
	Filtering					
	Audio Sampling Rate : 8 kHz/16 kHz/32 kHz/44.1 kHz/48 kHz					
	Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC					
	Simultaneous Live View : Up to 3 channels					
	API : ONVIF (Profile S/Profile G/Profile T)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Protocols : TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, NTP, UPnP, SMTP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP,, PPPoE, ARP, SNMP etc.					
	User/Host : minimum 20 Users					
	Network Storage : NAS;FTP;SFTP; Micro SD card 128 GB					
	Web Browser : IE (versions newer than IE8), Chrome, Firefox					
	SNR : ≥ 52 dB					
	Day/Night Switch : Day, Night, Auto, Schedule					
	Image Enhancement : BLC/HLC/WDR (120 dB)					
	Alarm : 1 input, 1 output					
	Audio : 1 input (line in), 1 output (line out)					
	On-Board Storage : Micro SD card up to 256 GB					
	Ethernet Interface : RJ-45 (10/100 Base-T)					
	Basic Event : Motion detection (human and vehicle targets classification), video tampering alarm, exception					
	Smart Event : Face Detection ,Unattended baggage detection, object removal detection, scene change detection, audio exception detection ,Line crossing detection, intrusion detection, region entrance detection, region exiting detection etc.					
	Face Capture : yes					
	Power Supply : DC 12V ($\pm 30\%$), PoE (802.3 at /af)					
	Power Consumption : maximum 15 Watt					
	Camera Material : Metal					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Operating Temperature : -30 °C to 60 °C (-22 °F to 140 °F). and humidity Humidity 95% or less (non-condensing)					
	Protection : IP 66, IK10					
	Certifications : CE,UL,FCC					
	Accepted/ Approved by the Engineer in Charge	Each	28,375.00	28,375.00	28,375.00	28,375.00
15.3.15	Supply and fixing of 4 MP, face detection capable Outdoor PTZ CAMERA (including lens, bracket, housing) of following technical specification or equivalent :					
	Image Sensor : 1/2.8" Progressive Scan CMOS , 4 Megapixel (minimum)					
	: Color: 0.002 Lux @ (F1.2/F1.35), B/W: 0 Lux with IR					
	Min. Illumination : 1/3 s to 1/30,000 s					
	Shutter Speed : 120 dB					
	Wide Dynamic Range : 4.9 to 153 mm					
	Focal Length : 32 x					
	Optical Zoom : 16x					
	Digital Zoom : horizontal FOV 54–2°, vertical FOV : 31°–1°Diagonal FOV : 61°–2.3° or above					
	Focal Length & FOV : F1.6 maximum					
	Aperture : D: 120 m , O: 48 m , R: 24 m I: 12 m					
	DORI : IR					
	Supplement Light Type : minimum 150 m					
	IR Range : 0°~360° ; -15°~90°(auto flip)					
	Pan/Tilt range : 0°~160° , preset speed :240°/s					
	Pan speed : 0°~120° , preset speed :200°/s					
	Tilt speed : 300					
	Presets : minimum 4					
	Pattern scan : minimum 5					
	Patrol scan : 2560x1440					
	Max. Resolution :					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Main Stream : Main Stream: 2560x1440 (1 fps-25 fps)					
	Sub-Stream : 50 Hz: 25 fps (704x576)					
	Third Stream : Third Stream: 1280x720 (1 fps-25 fps)					
	Video Compression : H.265/H.264/H.264+/H.265+/MJPEG (only supported by sub stream)					
	Video Bit Rate : 32 Kbps to 16 Mbps					
	H.264+ : Main stream supports					
	H.265+ : Main stream supports					
	Bit Rate Control : CBR/VBR					
	Region of Interest (ROI) : Off/On (minimum 4 Zone)					
	Environment Noise : Yes					
	Filtering					
	Audio Sampling Rate : 8 kHz/16 kHz/32 kHz/44.1 kHz/48 kHz					
	Audio Compression : G.711ulaw/G.711alaw/G.722.1/G.726/M P2L2/PCM/MP3/AAC					
	Simultaneous Live View : Up to 3 channels					
	API : ONVIF (Profile S/Profile G/Profile T)					
	Protocols : TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, NTP, UPnP, SMTP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP,, PPPoE, ARP, SNMP etc.					
	User/Host : minimum 20 Users					
	Network Storage : NAS;FTP;SFTP; Micro SD card 256 GB					
	Web Browser : IE (versions newer than IE8), Chrome, Firefox					
	SNR : ≥ 52 dB					
	Day/Night Switch : Day, Night, Auto, Schedule					
	Image Enhancement : BLC/HLC/WDR (120 dB)					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Alarm : 1 input, 1 output	Each	80,710.00	80,710.00	80,710.00	80,710.00
	Audio : 1 input (line in), 1 output (line out)					
	On-Board Storage : Micro SD card up to 256 GB					
	Ethernet Interface : RJ-45 (10/100 Base-T)					
	Basic Event : Motion detection (human and vehicle targets classification), video tampering alarm, exception					
	Smart Event : Face Detection ,Unattended baggage detection, object removal detection, scene change detection, audio exception detection ,Line crossing detection, intrusion detection, region entrance detection, region exiting detection etc.					
	Face Capture : yes					
	Power Supply : DC 12V (±30%), PoE (802.3 at /af)					
	Power Consumption : maximum 15 Watt					
	Camera Material : Metal					
	Operating Temperature : -30 °C to 60 °C (-22 °F to 140 °F).					
	and humidity Humidity 90% or less (non-condensing)					
	Protection : IP 66, IK10					
	Certifications : CE,UL,FCC					
	Accepted/ Approved by the Engineer in Charge					
		Each	80,710.00	80,710.00	80,710.00	80,710.00

15.4 Face Recognition Type IP CCTV System :Type -D

[In order to use Face Recognition Type IP CCTV System, Face Detection capable camera of item no. 15.3.2 to 15.3.15 can be used with Face Recognition Capable NVR of Item no. 15.4]

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
15.4	Supply and fixing of 32/64 Channel (80 TB HDD Capacity) Face Recognition Capable Network Video Recorder (NVR) of following technical specification or equivalent : IP video input : 32/64 Channel ,Up to 12 MP resolution Facial detection and analytics : Face picture comparison, human face capture, face picture search Face picture library : Up to 20 face picture libraries, with up to 100,000 face pictures in total Performance of facial detection and analytics : up to 8-ch human face capture with face detection camera video stream face recognition : up to 4 ch video stream face recognition (depending on face capture analytics) Metadata and attributes Face : Gender, age, glasses, beard, mouth mask, expression etc. Vehicle : Vehicle type vehicle color etc. AI Search : Support search target video by metadata. Two-way audio : 1 Channel Input, 1 Channel Output, RCA Incoming bandwidth : 256/320 Mbps respectively (minimum) Outgoing bandwidth : 256 Mbps minimum Remote connection : 128 users Recording resolution : 24MP, 16MP, 12MP, 8MP, 6MP, 5MP, 4MP, 3MP, 1080P, 1.3MP, 720P etc.. Synchronous playback : 16 ch minimum Raid Support : RAID0, RAID1, RAID5, RAID10 VGA1 /HDMI1 output resolution : HDMI1: 3840 × 2160 , 1920 × 1080 , 1280 × 1024, 1280 × 720 , 1024 × 768 ; VGA1: 1920 × 1080 , 1280 × 1024, 1280 × 720 , 1024 × 768					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	VGA2 /HDMI2 output resolution : HDMI2/VGA2: 1920 × 1080					
	Decoding format : H.265/H.265+/H.264/H.264+/MPEG4					
	Decoding Capability : 16-ch@1080p (30 fps)					
	Live view/Playback resolution : 12MP, 8MP, 6MP, 5MP, 4MP, 3MP, 1080p, 1.3MP, 720p and more					
	Network protocols : HTTP, HTTPS, TCP/IP, IPv4/IPv6, UPnP, SMTP, NTP etc.					
	SATA : 8 SATA interfaces					
	eSATA : 1 eSATA interface					
	Capacity : Up to 10TB capacity for each HDD					
	Array type : RAID 0/1/5/6/10					
	Network interface : 2 RJ-45 Ports (10/100/1000Mbps)					
	Serial interface : RS-232; RS-485;					
	USB interface : Front panel: 2 × USB 2.0; Rear panel: 1 × USB 3.0 (minimum)					
	Alarm in/out : 16/6 or more					
	Intelligent Alarm : Facial Detection, Vehicle detection, Line crossing detection, intrusion detection, Region Entrance Detection, Loitering Detection, Fast Moving unattended baggage detection, object removal detection etc..					
	Power supply : Single, AC100V ~ 240V, 50 Hz					
	Power Consumption : ≤ 70 W					
	Working temperature : -10°C ~ +55°C (+14°F ~ +131°F), 10 to 90 % (RH)					
	Certifications : CE,UL,FCC					
	Accepted/ Approved by the Engineer in Charge					
15.4.1	For 32 Channel	Each	214,387.00	214,387.00	214,387.00	214,387.00
15.4.2	For 64 Channel	Each	264,831.00	264,831.00	264,831.00	264,831.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
15.5	Supply and fixing of Network Keyboard for PTZ cameras of following technical specification or equivalent : Keyboard Key panel : Electromechanical Joystick : 3-axis(minimum), vector-solving, with twisting, return to-center head Keyboard Connector : RJ-45, RS232, RS485, RS422 (reserved), USB Keyboard Communication : Direct Mode, Network Mode Display : LCD, 75.2mm×33.85mm (minimum) Minimum Number of Users : 16 Maximum no. of Devices : 1000 Power supply : input 100V~240V 50Hz/60Hz, output DC12V/2A Power Consumption : ≤ 5 W Working temperature : -10°C ~ +55°C (+14°F ~ +131°F), 10 to 90 % (RH) Certifications : CE Accepted/ Approved by the Engineer in Charge	Each	50,444.00	50,444.00	50,444.00	50,444.00
15.6.1	Supply and fixing of 55" 4K Monitor of following technical specification or equivalent : Screen Size : 1m 38cm (55") Resolution : 3,840 x 2,160 Picture Engine : Crystal Processor 4K / Hyper Real or equivalent HDR (High Dynamic Range) : HDR HDR 10+ : Support Contrast Enhancer : Yes Auto Motion Plus : Yes					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Dolby Digital Plus : Yes Sound Output (RMS) : 20W Speaker Type : 2CH Active Noise Reduction : yes Aspect ratio : 4:3 /16:9 Wide Screen : yes Sound Mirroring : Yes WiFi Direct : Yes HDMI : 2 (with minimum 3 meter HDMI Cable) USB : 1 Power Supply : AC220-240V 50/60Hz Power Consumption (Max) : 170 W					
15.6.2	Accepted/ Approved by the Engineer in Charge Supply and fixing of 43" Full HD Monitor of following technical specification or equivalent : Screen Size : 43" Resolution : 1920×1080 (FHD) HDR (High Dynamic Range) : HDR HDR 10+ : Support Contrast Enhancer : Yes Auto Motion Plus : Yes Dolby Digital Plus : Yes Sound Output (RMS) : 20W Speaker Type : 2CH Active Noise Reduction : yes Aspect ratio : 4:3 /16:9 Wide Screen : yes Sound Mirroring : Yes WiFi Direct : Yes	Each	133,550.00	133,550.00	133,550.00	133,550.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	HDMI : 2 (with minimum 3 meter HDMI Cable)					
	USB : 1					
	Power Supply : AC220-240V 50/60Hz					
	Power Consumption (Max) : 115 W					
	Accepted/ Approved by the Engineer in Charge	Each	62,929.00	62,929.00	62,929.00	62,929.00
15.6.3	Supply and fixing of 32" Monitor of following technical specification or equivalent :					
	Screen Size : 32"					
	Resolution : 1,366 x 768 or higher					
	HDR (High Dynamic Range) : HDR					
	HDR 10+ : Support					
	Contrast Enhancer : Yes					
	Auto Motion Plus : Yes					
	Dolby Digital Plus : Yes					
	Sound Output (RMS) : 20W					
	Speaker Type : 2CH					
	Active Noise Reduction : yes					
	Aspect ratio : 4:3 /16:9					
	Wide Screen : yes					
	Sound Mirroring : Yes					
	WiFi Direct : Yes					
	HDMI : 2 (with minimum 3 meter HDMI Cable)					
	USB : 1					
	Power Supply : AC220-240V 50/60Hz					
	Power Consumption (Max) : 60 W					
	Accepted/ Approved by the Engineer in Charge	Each	36,446.00	36,446.00	36,446.00	36,446.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
15.7.1	Supply and fixing of 4 TB Surveillance Hard Disk Drive for NVR of following specification or equivalent: Storage 4TB , Form Factor (Inch) 3.5 Inch Interface. SATA 6Gb/s RPM 5400 RPM Buffer 64 MB Data Transfer Rates : 157 MB/s or higher MTBF 1,000,000 hours or higher Warranty 3 years (to be attained from the supplier separately) Accepted/ Approved by the Engineer in Charge	Each	18,916.00	18,916.00	18,916.00	18,916.00
15.7.2	Supply and fixing of 6 TB Surveillance Hard Disk Drive for NVR of following specification or equivalent: Storage 6TB , Form Factor (Inch) 3.5 Inch Interface. SATA 6Gb/s RPM 5400 RPM /7200 RPM Buffer 64 MB Data Transfer Rates : 180 MB/s or higher MTBF 1,000,000 hours or higher Warranty 3 years (to be attained from the supplier separately) Accepted/ Approved by the Engineer in Charge	Each	30,266.00	30,266.00	30,266.00	30,266.00
15.7.3	Supply and fixing of 8 TB Surveillance Hard Disk Drive for NVR of following specification or equivalent: Storage 8TB , Form Factor (Inch) 3.5 Inch Interface. SATA 6Gb/s RPM 7200 RPM Buffer 256MB Data Transfer Rates : 235MB/s or higher MTBF 1,000,000 hours or higher Warranty 3 years (to be attained from the supplier separately) Accepted/ Approved by the Engineer in Charge	Each	31,338.00	30,492.00	30,492.00	30,492.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
15.7.4	Supply and fixing of 10 TB Surveillance Hard Disk Drive for NVR of following specification or equivalent: Storage 10TB , Form Factor (Inch) 3.5 Inch Interface. SATA 6Gb/s RPM 7200 RPM Buffer 256MB Data Transfer Rates : 248MB/s or higher MTBF 1,000,000 hours or higher Warranty 3 years (to be attained from the supplier separately) Accepted/ Approved by the Engineer in Charge	Each	42,688.00	42,688.00	42,688.00	42,688.00
15.8	Supply and fixing of 128 GB Surveillance grade SD Card	Each	6,053.00	6,053.00	6,053.00	6,053.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
15.9	Supply and Installation of 24 port PoE Managed Switch of the following specification or equivalent- VLAN Support for up to 4,094 VLANs simultaneously Port-based and 802.1Q tag-based VLANs; MAC-based VLAN; protocol-based VLAN; IP ,subnet-based VLAN ,Management VLAN Relay of DHCP traffic to DHCP server in different VLAN; works with DHCP GMP limits bandwidth-intensive multicast traffic to only the requesters; supports 2K multicast groups Layer 2 switching ,Wirespeed routing of IPv4 packets Up to 990 static routes and up to 128 IP interfaces Switching capacity and forwarding rate 56.0 Gbps 802.3af PoE, 802.3at PoE+ or 60W PoE delivered over the RJ-45 ports within the listed power budgets 350 watt or above Maximum Power consumption 110V=46.60W ,220V=46.35W 24 10/100/1000 PoE+ ports , 4 Gigabit SFP 24 x Gigabit Ethernet , RJ-45 ports, 4 x SFP combo ports for uplink packet buffer 1.5MB Secure Shell (SSH) Protocol ,Secure Sockets Layer (SSL),Web-based authentication ,DoS prevention IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000BASE-T Gigabit Ethernet, IEEE 802.3ad etc. Accepted/ Approved by the Engineer in Charge	Each	73,144.00	71,169.00	71,169.00	71,169.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
15.10	Supply and Installation of 16 port PoE Managed Switch of the following specification or equivalent- VLAN Support for up to 4,094 VLANs simultaneously Relay of DHCP traffic to DHCP server in different VLAN; works with DHCP Layer 2 switching Switching capacity and forwarding rate minimum 8.8 Gbps Packet Forwarding Rate ; minimum 5.36 Mpps PoE Standard -IEEE 802.3af, IEEE 802.3at Max. Port Power 30 W PoE Power Budget: minimum 190 W Port Number 16 × Gigabit PoE ports, and 2 × Gigabit fiber optical ports packet buffer 2.75 Mbit or above Communication Standard IEEE802.3; IEEE802.3u; IEEE802.3x; IEEE 802.3ab; IEEE 802.3z Accepted/ Approved by the Engineer in Charge	Each	35,311.00	35,311.00	35,311.00	35,311.00
15.11	Providing and fixing of media converter of the following specification or equivalent - Standards and Protocols IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z Basic Function Extends fiber distance up to 9.3 miles (15km) Ports 1 x 1000M dual SC/UPC port 1 x 10/100/1000M RJ45 port (Auto MDI/MDIX) Wave Length 1310nm Network Media 1000BASE-LX Single-mode Fiber					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Network Media 1000BASE-T UTP category 5, 5e cable (maximum 100m) EIA/TIA-568 100Ω STP (maximum 100m) LED Indicators PWR, Link/Act Power Supply External Power Adapter Max Power Consumption 1.8W Safety & Emission FCC, CE, RoHS Environment Operating Temperature: 0°C~40°C (32°F~104°F) Operating Humidity: 10%~90% non-condensing Accepted/ Approved by the Engineer in Charge	Each	8,197.00	8,197.00	8,197.00	8,197.00
15.12	Providing and fixing of Ethernet Surge Protector of the following specification or equivalent - Protects up to 10 kV surge Supports data rates of up to 1 Gbps Robust and waterproof, IP66 rated Can be wall or pole mounted including necessary earthing up to 10 ft Accepted/ Approved by The Engineer in charge.	Each	14,503.00	14,503.00	14,503.00	14,503.00
15.13.1	Installation, testing, commissioning of entire CCTV up to 16 Channel	Each	15,133.00	14861	13831	13831
15.13.2	Installation, testing, commissioning of entire CCTV up to 32 Channel	Each	30,266.00	29721	27663	27663
15.13.3	Installation, testing, commissioning of entire CCTV up to 64 Channel	Each	60,533.00	59442	55326	55326

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Subhead- 16

Public Address & Sound System

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.1	Line Array Speaker System					
16.1.1	Supply, Installation, Testing & Commissioning of Two-Way Line Array type Main Auditorium Speaker including accessories of following technical specification or equivalent- Frequency Response: 87Hz-16 kHz Long term / Continuous power- LF: 400W-500W, HF: 30W-120W Program- LF: 800W-1000W, HF: 60W-240W Short term/ Peak power- LF: 1600W-2000W, HF: 120W-480W Nominal Impedance: 8-16 ohm, Calculated Maximum SPL @ 1 m- LF: 122-128dB , HF: 128-132dB. Coverage Pattern: At least 90° H x 10° V CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	445,420.00	445388	445303	445303

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.1.2	Supply, Installation, Testing & Commissioning of dual driver Two-Way Line Array type Main Auditorium Speaker including accessories of following technical specification or equivalent- Frequency Response: 87Hz-15.3 kHz Long term / Continuous power- LF: 600W-800W, HF: 50W-150W Program- LF: 1200W-1600W, HF: 100W-260W Short term/ Peak power- LF: 2400W-3200W, HF: 200W-500W Nominal Impedance: 8-16 ohm, Calculated Maximum SPL @ 1 m- LF: 128-135dB , HF: 132-139dB. Coverage Pattern: At least 100° H x 10° V CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	813,030.00	812992	812907	812907
16.2	Point Source Speaker System					
16.2.1	Supply, Installation, Testing & Commissioning of Two-Way Point Source type Speaker (suitable for small medium convention hall, gallery etc.) including accessories of following technical specification or equivalent- Frequency Response: 75Hz-18 kHz System power- Long term / Continuous power: 80W-120W, Program: 160W-240W, Short term/ Peak power: 320W-480W Nominal Impedance: 8 ohm, Calculated Maximum SPL @ 1 m: 90-115dB. Coverage Pattern: At least 60° H x 60° V CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	99,879.00	99854	99769	99769

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.2.2	Supply, Installation, Testing & Commissioning of Two-Way Point Source type Speaker (suitable for small medium convention hall, gallery etc.) including accessories of following technical specification or equivalent- Frequency Response: 75Hz-18 kHz System power- Long term / Continuous power: 150W-200W, Program: 300W-400W, Short term/ Peak power: 600W-800W Nominal Impedance: 8 ohm, Calculated Maximum SPL @ 1 m: 116-123dB. Coverage Pattern: At least 60° H x 60° V CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.		125,101.00	125076	124990	124990
16.2.3	Supply, Installation, Testing & Commissioning of Two-Way Point Source type Main Auditorium Speaker including accessories of following technical specification or equivalent- Frequency Response: 70Hz-16 kHz System power- Long term / Continuous power: 350W-400W, Program: 700W-800W, Short term/ Peak power: 1400W-1600W Nominal Impedance: 8 ohm, Calculated Maximum SPL @ 1 m: 128-135dB. Coverage Pattern: At least 80° H x 50° V CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	171,762.00	171736	171649	171649

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.2.4	Supply, Installation, Testing & Commissioning of Two-Way Point Source type Main Auditorium Speaker including accessories of following technical specification or equivalent- Frequency Response: 70Hz-16 kHz System power- Long term / Continuous power: 500W-600W, Program: 1000W-1200W, Short term/ Peak power: 2000W-2400W Nominal Impedance: 8 ohm, Calculated Maximum SPL @ 1 m: 130-139dB. Coverage Pattern: At least 90° H x 45° V CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	234,817.00	234789	234704	234704
16.2.5	Supply, Installation, Testing & Commissioning of Two-Way Point Source type Main Auditorium Speaker including accessories of following technical specification or equivalent- Frequency Response: 70Hz-16 kHz System power- Long term / Continuous power: 800W-1000W, Program: 1600W-2000W, Short term/ Peak power: 2400W-3000W Nominal Impedance: 4-8 ohm, Calculated Maximum SPL @ 1 m: 134-139dB. Coverage Pattern: At least 90° H x 45° V CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	442,898.00	442866	442781	442781
16.3	Line Array Subwoofer System					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.3.1	Supply, Installation, Testing & Commissioning of Line Array type Subwoofer including accessories of following technical specification or equivalent- Frequency Response: 40Hz-100 Hz@ ±3dB or 50Hz- 250 Hz @-6dB System power- Long term / Continuous power: 500W-550W, Program: 1000W-1100W, Short term/ Peak power: 2000W-2200W Nominal Impedance: 8 ohm, Calculated Maximum SPL @ 1 m: 130-139dB. CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	460,805.00	460773	460688	460688
16.3.2	Supply, Installation, Testing & Commissioning of Line Array type Subwoofer including accessories of following technical specification or equivalent- Frequency Response: 32Hz- 220 Hz @-10dB System power- Long term / Continuous power: 800W-1200W, Program: 1600W-2400W, Short term/ Peak power: 3200W-4800W Nominal Impedance: 8 ohm, Calculated Maximum SPL @ 1 m: 130-145dB. CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	483,127.00	483095	483009	483009
16.4	Point Source Subwoofer System					
16.4.1	Supply, Installation, Testing & Commissioning of Point Source type Subwoofer including accessories of following technical specification or equivalent- Frequency Response: 36Hz-250 Hz@ -10dB or 50Hz- 500 Hz @-6dB					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.4.2	System power- Long term / Continuous power: 300W-400W, Program: 600W-800W, Short term/ Peak power: 1200W-1600W Nominal Impedance: 4-8 ohm, Calculated Maximum SPL @ 1 m: 126-132dB. CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge. Supply, Installation, Testing & Commissioning of Point Source type Subwoofer including accessories of following technical specification or equivalent- Frequency Response: 32Hz-150 Hz@ -10dB or 38Hz- 200 Hz @-6dB System power- Long term / Continuous power: 500W-600W, Program: 1000W-1200W, Short term/ Peak power: 2000W-2400W Nominal Impedance: 4-8 ohm, Calculated Maximum SPL @ 1 m: 133-138dB. CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	165,456.00	165431	165344	165344
16.4.3	Supply, Installation, Testing & Commissioning of Point Source type Subwoofer including accessories of following technical specification or equivalent- Frequency Response: 35Hz-1KHz@ ±3dB System power- Long term / Continuous power: 1600W-2000W, Program: 3200W-4000W, Short term/ Peak power: 6400W-8000W Nominal Impedance: 4-8 ohm, Calculated Maximum SPL @ 1 m: 135-148dB. CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	247,428.00	247400	247314	247314
	System power- Long term / Continuous power: 1600W-2000W, Program: 3200W-4000W, Short term/ Peak power: 6400W-8000W Nominal Impedance: 4-8 ohm, Calculated Maximum SPL @ 1 m: 135-148dB. CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	676,201.00	676165	676080	676080

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.5	Stage Monitor Speaker					
16.5.1	Supply, Installation, Testing & Commissioning of 2 way Stage Monitor Speaker including accessories of following technical specification or equivalent- Frequency Response: 70Hz-16KHz System power- Long term / Continuous power: 250W-300W, Program: 500W-600W, Short term/ Peak power: 1000W-1200W Nominal Impedance: 4-8 ohm. Calculated Maximum SPL @ 1 m: 122-131dB. Coverage Pattern: At least 90° H x 50° V CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	193,200.00	193174	193088	193088
16.5.2	Supply, Installation, Testing & Commissioning of 2 way Stage Monitor Speaker including accessories of following technical specification or equivalent- Frequency Response: 70Hz-20KHz System power- Long term / Continuous power: 500W-800W, Program: 1000W-1600W, Short term/ Peak power: 2000W-2400W Nominal Impedance: 4-8 ohm, Calculated Maximum SPL @ 1 m: 127-137dB. Coverage Pattern: At least 90° H x 45° V CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	234,817.00	234789	234704	234704
16.6	Side Wall Speaker					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.6.1	Supply, Installation, Testing & Commissioning of 2 way Side Wall / Delay Speaker including accessories of following technical specification or equivalent- Frequency Response: 60Hz-18KHz System power- Long term / Continuous power: 150W-200W, Program: 200W-400W, Short term/ Peak power: 600W-800W Nominal Impedance: 4-8 ohm, SPL:118-131dB Coverage Pattern: At least 60° H x 60° V CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	123,903.00	123896	123879	123879
16.6.2	Supply, Installation, Testing & Commissioning of 2 way Side Wall Speaker including accessories of following technical specification or equivalent- Frequency Response: 60Hz-18KHz System power- Long term / Continuous power: 250W-300W, Program: 500W-600W, Short term/ Peak power: 1000W-1200W Nominal Impedance: 4-8 ohm, SPL:118-131dB Coverage Pattern: At least 60° H x 60° V CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	152,908.00	152901	152884	152884
16.7	Front Fill Speaker Supply, Installation, Testing & Commissioning of 2 way Front Fill Speaker including accessories of following technical specification or equivalent- Frequency Response: 70Hz-18KHz System power- Long term / Continuous power: 150W-250W, Program: 300W-500W, Short term/ Peak power: 600W-1000W Nominal Impedance: 4-8 ohm.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.8	SPL:100-120dB Coverage Pattern: At least 90° H x50° V CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge. Green Room / Control Room Speaker Supply, Installation, Testing & Commissioning of self powered green room/ control room Speaker including accessories of following technical specification or equivalent- Frequency Response: 70Hz-18KHz System power- 35W-50W, Nominal Impedance: 4-8 ohm, SPL:100-115dB CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge	Each	123,903.00	123896	123879	123879
16.9	Ceiling Speaker Supply, Installation, Testing & Commissioning of Professional heavy duty, ceiling mounted speaker ideal for airports, lounges, convention centers, corporate boardrooms, hotels / hospitality, houses of worship, museums offices, of patois, spaces schools, theaters and theme parks, superior sound quantity, wide dispersion and smooth off-axis coverage of following technical specification or equivalent- Frequency range (nominal): 85Hz to 18 KHz. (±3db). Nominal impedance: 8Ω Nominal sensitivity(1w, 2m) : 90dB SPL Components : LF & HF driver. CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	52,273.00	52266	52250	52250

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.9.1	1.5W-5W	Each	6,242.00	6237	6221	6221
16.9.2	6W-12W	Each	11,035.00	11030	11013	11013
16.9.3	15W-20W	Each	21,502.00	21496	21480	21480
16.9.4	21W-30W	Each	28,690.00	28684	28668	28668
16.10	Column Speaker Supply, Installation, Testing & Commissioning of Column / wall speaker ideal for airports, lounges, convention centers, corporate boardrooms, hotels / hospitality, houses of worship, museums offices, of patois, spaces schools, theaters and theme parks, superior sound quantity, wide dispersion and smooth off-axis overage, superior sound quality, wide dispersion and smooth off axis coverage, fast and easy installation of following technical specification or equivalent- Line voltage : 70V / 100V Sensitivity : >85dB. Frequency response: 150Hz-15KHz. Enclosure material : Plastic Line Dispersion angle : 100°. CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.					
16.10.1	10W - 15W	Each	18,601.00	18596	18579	18579
16.10.2	16W - 20W	Each	22,384.00	22379	22362	22362
16.10.3	21W - 30W	Each	24,907.00	24901	24884	24884
16.10.4	50W - 60W	Each	32,473.00	32468	32452	32452
16.10.5	70W - 80W	Each	52,020.00	52014	51998	51998
16.11	Garden Speaker					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.12	Supply, Installation, Testing & Commissioning of Garden Speaker of following technical specification or equivalent- 10W-20W Sensitivity : 82-88dB Frequency response : 80Hz-15KHz. Coverage Angle: 360° horizontal, 160° vertical Minimum IP 55 rating CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge Horn Speaker	Each	53,155.00	53149	53133	53133
16.13	Supply, Installation, Testing & Commissioning of Horn Speaker of following technical specification or equivalent- 15W-20W Sensitivity : 100-110dB Frequency response : 400 Hz – 7.5 kHz Minimum IP 65 rating CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge Power Amplifier	Each	15,827.00	15822	15805	15805

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.13.1	Supply, Installation, Testing & Commissioning of dual channel power amplifier including accessories of following technical specification or equivalent- Stereo Power Output : RMS (Dual Channels)- 8Ωx2: 215W- 350W ,4Ωx2: 350W- 460W Bridged Mono Power Output : RMS- 8Ωx1: 700W- 950W Frequency Response: 20Hz- 20 KHz Signal to Noise Ratio > 97 dB Total Harmonic Distortion (THD) <0.5% Power Supply: 120 or 230 Vac 50Hz. Class: AB/ D/ H CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	147,170.00	147144	147059	147059
16.13.2	Supply, Installation, Testing & Commissioning of dual channel power amplifier including accessories of following technical specification or equivalent- Stereo Power Output : RMS (Dual Channels)- 8Ωx2: 475W- 630W ,4Ωx2: 800W- 1000W Bridged Mono Power Output : RMS- 8Ωx1: 1600W- 1950W Frequency Response: 20Hz- 20 KHz Signal to Noise Ratio ≥100 dB Total Harmonic Distortion (THD) <0.5% Power Supply: 120 or 230 Vac 50Hz. Class: H CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	196,857.00	196831	196746	196746

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.13.3	Supply, Installation, Testing & Commissioning of dual channel power amplifier including accessories of following technical specification or equivalent- Stereo Power Output : RMS (Dual Channels)- 8Ωx2: 650W- 880W ,4Ωx2: 1200W- 1300W Bridged Mono Power Output : RMS- 8Ωx1: 2400W- 2600W Frequency Response: 20Hz- 20 KHz Signal to Noise Ratio ≥100 dB Total Harmonic Distortion (THD) <0.5% Power Supply: 120 or 230 Vac 50Hz. Class: H CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	215,774.00	215747	215661	215661
16.13.4	Supply, Installation, Testing & Commissioning of 4 channel power amplifier including accessories of following technical specification or equivalent- Stereo Power Output : RMS - 8Ωx4: 1200W- 1900W ,4Ωx4: 2000W- 2400W Bridged Mono Power Output : RMS- 8Ωx2: 4000W- 4800W Frequency Response: 20Hz- 20 KHz Signal to Noise Ratio >108 dB Total Harmonic Distortion (THD) <0.35% Power Supply: 100 to 230 Vac 50Hz. Class: H CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	382,870.00	382840	382753	382753

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.14	Mixing Console					
16.14.1	Supply, Installation, Testing & Commissioning of 16 channel mixing console of following technical specification or equivalent- Input Channels: 16 channels , stereo channels:2 Output Channels: minimum Stereo Out: 2, Monitor Out: 1, Aux Send: 4, Group Out: 2 Bus: 9 (minimum) Frequency Response : 22Hz - 20KHz Phantom Power Voltage +48 V High Pass Filter :80-100Hz, 12-18dB per octave Level Meter : 12 -segment LED meter Power Requirements AC 100-240 V, 50 Hz CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	204,424.00	204374	204204	204204

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.14.2	Supply, Installation, Testing & Commissioning of 24 channel mixing console of following technical specification or equivalent- Input Channels: 24 channels , stereo channels:4 Output Channels: minimum Stereo Out: 2, Monitor Out: 1, Aux Send: 4, Group Out: 4 Bus: 9 (minimum) Frequency Response : 22Hz - 20KHz Phantom Power Voltage +48 V High Pass Filter :80-100Hz, 12-18dB per octave Level Meter : 12 -segment LED meter Power Requirements AC 100-240 V, 50 Hz CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	282,612.00	282561	282390	282390
16.14.3	Supply, Installation, Testing & Commissioning of 32 channel mixing console of following technical specification or equivalent- Input Channels: 32 channels , stereo channels:4 Output Channels: minimum Stereo Out: 2, Monitor Out: 1, Aux Send: 4, Group Out: 4 Bus: 9 (minimum) Frequency Response : 22Hz - 20KHz Phantom Power Voltage +48 V High Pass Filter :80-100Hz, 12-18dB per octave Level Meter : 12 -segment LED meter Power Requirements AC 100-240 V, 50 Hz CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	330,534.00	330482	330310	330310

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.14.4	Supply, Installation, Testing & Commissioning of 32 channel Digital Mixing Console of following technical specification or equivalent- Input Channels: 32 channels (minimum) , Output Channels: 16 XLR analogue line outputs (minimum), AES out Frequency Response : 22Hz - 20KHz Phantom Power Voltage +48 V Data I/O: 1 x Ethernet (minimum) USB: 1 (minimum) Faders: 26 x Motorized (minimum) Headphones: 1 x 1/4" A/D Resolution: 24-bit/48kHz Screen: minimum 5" Touchscreen Power Requirements AC 100-240 V, 50 Hz CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	891,344.00	891282	891111	891111
16.15	Mixer Amplifier					
16.15.1	Supply, Installation, Testing & Commissioning of mixers-amplifier of following technical specification or equivalent- input : minimum 8 power output: 2 x 40W RMS input sensitivity: 4ohm/8ohm power supply: 100-240 Vac , 50 Hz CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge	Each	155,746.00	155697	155525	155525

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.15.2	Supply, Installation, Testing & Commissioning of mixers-amplifier of following technical specification or equivalent- input : minimum 6 power output: 2 x 250W RMS input sensitivity: 4ohm/8ohm power supply: 100-240 Vac , 50 Hz CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge	Each	257,075.00	257065	257043	257043
16.15.3	Supply, Installation, Testing & Commissioning of mixers-amplifier of following technical specification or equivalent- input : minimum 4 power output: 120 RMS input sensitivity: 4ohm/8ohm Frequency Response 35-20000Hz power supply: 100-240 Vac , 50 Hz CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge	Each	90,925.00	90878	90706	90706
16.16	Microphone					
16.16.1	Supply, Installation, Testing & Commissioning of vocal/ dynamic microphone of following technical specification or equivalent- Characteristics: Dynamic, Polar pattern: supercardioid/ cardioid, Frequency Response 80Hz~13 kHz, Output impedance 500-600ohm. CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge	Each	17,214.00	17211	17202	17202

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.16.2	Supply, Installation, Testing & Commissioning of gooseneck/ podium microphone with on-off switch of following technical specification or equivalent- Polar pattern: cardioid Frequency Response 80Hz~18 kHz, Output impedance 220-600ohm. Maximum SPL: 120-125dB Microphone Length: 45 cm minimum CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	54,543.00	54539	54530	54530
16.16.3	Supply, Installation, Testing & Commissioning of large diaphragm cardioid condenser microphone of following technical specification or equivalent- Polar pattern : cardioid Frequency Response 20Hz~20 kHz, Bass Cut Filter: 80-300 Hz, 12 dB/octave SNR; 75-85dB CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	37,265.00	37262	37253	37253
16.16.4	Supply, Installation, Testing & Commissioning of Wireless Microphones (Hand Held Type) of following technical specification or equivalent- suitable for 1 transmitter, Preset with 16 selectable UHF channel, RF frequency range :600 MHz-750MHz or any suitable carrier frequency range ,Channel 16, Frequency Response: 50Hz-18KHz, operating range 100m. CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	69,550.00	69545	69537	69537

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.16.5	Supply, Installation, Testing & Commissioning of Wireless Microphones (Tie Clip Type) of following technical specification or equivalent- suitable for 1 transmitter, Preset with 16 selectable UHF channel, RF frequency range :700MHz-750MHz or any suitable carrier frequency range ,Channel 16, Frequency Response: 50Hz-18KHz, operating range 100m. CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	60,470.00	60466	60457	60457
16.16.6	Supply, Installation, Testing & Commissioning of Wireless Microphones (Headset Type) of following technical specification or equivalent- Suitable for 1 transmitter, Preset with 8 selectable UHF channel, RF frequency range :700MHz-750MHz or any suitable carrier frequency range ,Channel 8 (minimum), Frequency Response: 50Hz-18KHz, operating range 100m. CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	53,155.00	53152	53143	53143
16.16.7	Supply, Installation, Testing & Commissioning of Cardioids Condenser Hanging Microphone of following technical specification or equivalent- Polar pattern : cardioid Frequency Response 80Hz~20 kHz, Low-Frequency Roll-Off 80 Hz, 18 dB/octave Output impedance 220-250ohm. Maximum SPL: 130-135dB CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	44,328.00	44324	44316	44316

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.16.8	Supply, Installation, Testing & Commissioning of Instrument Microphone of following technical specification or equivalent- Polar pattern : cardioid Frequency Response 50Hz-16 kHz, CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	22,511.00	22507	22499	22499
16.16.9	Supply, Installation, Testing & Commissioning of Boundary Microphone with on/off switch of following technical specification or equivalent- Polar pattern: cardioid Frequency Response 50Hz-20 kHz, SNR: 68-72dB Maximum sound pressure level: 132-140 dB CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	65,766.00	65762	65754	65754
16.17	Supply, Installation, Testing & Commissioning of Professional Studio Headphones of following technical specification or equivalent- Driver size (mm): 30 (minimum) Sensitivity (dB SPL/V @ 1 kHz): 80~125 Rated impedance (Ω): 55 Audio frequency bandwidth (Hz): 15 - 20000 Type: Stereo plug – 3.5mm (1/8-inch) with 6.3 mm (1/4") screw-on adapter Gender: Male Contacts: 3-pin CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	66,901.00	66900	66900	66900

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.18	Supply, Installation, Testing & Commissioning of Audio crossover of following technical specification or equivalent- Connectors 1/4" TRS (pin 2 hot), input impedance : balanced 20k ohm, unbalanced 10k ohm, max. input level : +20dBu balanced or unbalanced, output impedance : balanced 50ohm, unbalanced 100 ohm, max. output level : +21dBu, subwoofer output : 1/4" TRS (pin 2 hot), signal to noise ratio : 90 dB, THD + noise : < 0.004%, inter channel crosstalk : < -80dB, 20Hz to 20kHz, frequency range: 45Hz -10kHz, hum and noise : -95dB, frequency response : < 3Hz to >.90kHz, +0/-3 dB CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	76,296.00	76288	76263	76263
16.19	Supply, Installation, Testing & Commissioning of Audio equalizers of following technical specification or equivalent- • Constant Q filters • Switchable 6dB / 12dB fader range • Switchable bypass with LED indicator • Four LED output level meter plus input clip indicator • Input gain adjustable between -6 dB and +6dB. • Built in soft limit helps prevent overloads that damage speakers. • XLR / 1 / 4" TRS balanced / unbalanced inputs/outputs • Ground lift switch quickly solves earth loop and external noise issues Balanced 20k ohm, unbalanced 10k ohm, > +21dBu balanced or unbalanced, > 40dB, typically > 5dB at 1kHz, Impedance-balanced / unbalanced, RF filtered, balanced 100 ohm, unbalanced 50 ohm, > +21dBu balanced / unbalanced into 2k ohm or greater, 20Hz to 20kHz, +0.5 /-1dB, < 10Hz to > 50kHz, +0.5 /-3dB, signal to noise : 90dB, THD + noise : < 0.004%. CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	63,685.00	63678	63651	63651

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.20	Supply, Installation, Testing & Commissioning of Audio multi effect processor of following technical specification or equivalent- Wave-adaptive virtual room reverb algorithms for natural reverb and delay. Up to 7 adjustable parameters plus 2-band EQ per effect. 24-bit A / D and D / A converters with 64 / 128-times oversampling. True stereo processing for realistic channel separation in stereo image. 100 factory presets plus 100 user memory locations. Analog Audio Performance: Frequency Response 10 Hz – 20kHz +0 dB/-0.5 dB. THD+N <0.0019% 10Hz – 20kHz. Dynamic Range >109 dB (A-weighted) A/A. Crosstalk typical <-80 dB 20Hz – 20kHz. Digital Input and Output: Connectors Dual RCA (S/PDIF). Format S/PDIF 24-bit. Sample Rate 44.1 or 48kHz. Processing Delay 3.7 ms @ 48 kHz. Frequency Response 10Hz to 22kHz ±0.5 dB @ 48kHz. CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	69,991.00	69983	69957	69957

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.21	Supply, Installation, Testing & Commissioning of Music Sources of following technical specification or equivalent- . Mains power supply 230 VAC ±10% 50 Hz. DC External power supply VDC 24. Mains consumption VA 45. DC consumption mA 700 (max). CD/USB/SD player output level mV 250. USB/SD reader & recorder output level mV 900. Dual sound source system composed of: USB & SD Card Reader and Recorder / Remote Control. Recording through the Line-in is directly store to USB or SD Card. Offers USB and SD Card function of each replication. Recording format: MP3. Playing format: MP3, WMA. Accept the capacity of 128MB to 16G USB or SDHC Card. With a language learning function, can be broadcast repeatedly at designated areas. Adjustable recording quality, provide choice of 128Kbps and 192Kbps. Anti Shock CD / USB & SD Card Reader / Remote Control. Offers USB, SD Card and CD playing function of each replication. Playing format: MP3, WMA. Accept the capacity of 128MB to 16G USB or SD Card. CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	76,296.00	76288	76263	76263
16.22	Supplying and Fixing of Floor type microphone stand complete with arms and mic holder. Foreign. Complete with required accessories and in conformity to specified codes & specification of international standards. Model & sample to be approved by the Engineer in charge.	Each	6,936.00	6930	6903	6903
16.23	Supplying and Fixing of Table type microphone stand complete with arms and mic holder. Foreign. Complete with required accessories and in conformity to specified codes & specification of international standards. Model & sample to be approved by the Engineer in charge.	Each	5,927.00	5921	5894	5894

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.24	Supplying and Fixing of Standard Rack suitable for Sound System equipments. Made of 18 SWG MS sheet & MS angle of proper size and painted with plastic paint. Dimension: 20 inch x 20 inch x 60 inch or equivalent. No. of rack : 5 Fixed foot : 2, Rotating wheel:2, Local Custom Made. Model & sample to be approved by the Engineer in charge.	Each	10,719.00	10713	10686	10686
16.25	Supplying & Fixing of wall / pad mounted rack cabinet with low noise, fan on top, 2 side door, cam lock, front door glass with cam lock, 1 wall mounted power distribution unit, 6-way, welded frame with epoxy power coating painted, reliable structure, removable side panels, optional side locks, cable entry on both top cover and bottom panel. (Foreign Made). Model & sample to be approved by the Engineer in charge.					
16.25.1	Size : 600 x 450 x 368 mm or equivalent , 2 nos 4" fan	Each	9,458.00	9452	9425	9425
16.25.2	Size : 600 x 450 x 635 mm or equivalent , 2 nos 4" fan	Each	18,286.00	18279	18252	18252
16.25.3	Size : 600 x 1000 x 1016 mm or equivalent , 4 nos top fan	Each	38,464.00	38457	38430	38430
16.25.4	Size : 600 x 1000 x 2019 mm or equivalent , 4 nos top fan	Each	44,769.00	44762	44735	44735
16.26	Supplying and Fixing of XLR connectors (M+F), speaker stereo connectors, chassis mount etc. (minimum 4 Speaker & 6 microphone connection)	Lot	8,197.00	8197	8197	8197
16.27	Supplying and Fixing of Sound junction box for stage floor, one box containing of 5 socket outlet for the system (Local Custom Made).	Set	5,044.00	5044	5044	5044
16.28	Supplying and Fixing of Best quality foreign made cables suitable for connection of microphone & speaker.					
16.28.1	Microphone cables, 23 AWG (copper made twin core shielded , PVC Jacket, Cross linked PE Insulation, Dielectric strength: minimum 500 Vac)	Meter	164.00	164	164	164
16.28.2	Speaker cables, 12 AWG (copper made twin core shielded , PVC Jacket, PE Insulation, Dielectric strength: minimum 500 Vac)	Meter	156.00	156	156	156

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.29	Supplying and Fixing of Direct Inject Box/ Direct Box with the with the features of Premium Performance. Rugged Design. Stackable Chassis with Durable Rubber Foot. Gold-plated XLR Connector. Recessed Chrome Toggle Switches. Hi-Z ¼" Input Jack. Parallel ¼" Thru Jack. Transformer Isolated. Premium Shielded dbx Custom Transformer. Balanced XLR Lo-Z Output. 3-Way 0/20/40 dB Pad Switch. Flat/High-Cut Filter Switch. Output Polarity Invert Switch. Ground Lift Switch. +48V Phantom Powered Operation. Green LED Phantom Power. Indicator. Low-Noise Active Circuitry. CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	48,552.00	48545	48518	48518
16.30	Supply and fixing of Line Array rigging accessories with the features of Flying Bar for Line Array Subwoofer, 4Nos. of Joint bar for hanging Line array speaker with subwoofer and locally fabricated MS frame for security purpose to hookup from main ceiling including necessary rowel bolt with supporting chain Lever(suitable for 4 unit). Model & sample to be approved by the Engineer in charge.	Lot	339,740.00	339727	339701	339701
16.31	Supply, Installation, Testing & Commissioning of Digital Signal Processors (DSP) based Digital loudspeaker management system of following technical specification or equivalent- Frequency Response (±0.5dB): 20Hz - 20KHz A/D D/A Converter :24-bit S/N Ratio: >105dB Number of input: minimum 2 Number of output: minimum 6 PC connections: USB, RS485 CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	309,600.00	309587	309562	309562

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.32	Supply, Installation, Testing & Commissioning of Digital Signal Processors (DSP) based Digital loudspeaker management system of following technical specification or equivalent- Frequency Response (± 0.5 dB): 20Hz - 20KHz A/D D/A Converter :24-bit S/N Ratio: >105dB Number of inputs: minimum 12 (with 48v Phantom Power per Channel) Number of outputs: minimum 8 Low Latency, Fault Tolerant Digital Audio Bus & Configurable signal processing CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge.	Each	499,017.00	499001	498974	498974
16.33	Supply, Installation, Testing & Commissioning of Feedback Suppressor of following technical specification or equivalent- Number of Inputs: 2 (minimum) Input Connectors: Female XLR and 1/4" TRS Input Type: Electronically balanced/unbalanced, RF filtered Input Impedance: Balanced 50k Ω , Unbalanced 25k Ω Number of Outputs: 2 (minimum) Output Connectors: Male XLR and 1/4" TRS Output Type: Electronically balanced/unbalanced, RF filtered Output Impedance: Balanced >120 Ω , Unbalanced >60 Ω Inter-channel Crosstalk: >80 dB typical CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh.	Each	78,819.00	78810	78785	78785

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.34	Supply, Installation, Testing & Commissioning of Stage Box of following technical specification or equivalent- Mic/Line In :16 Line Out :8 48V Phantom power indicator Frequency Response : +0/-1dB, 20Hz – 20kHz T.H.D. Mic Sensitivity -30dBu: < 0.01% @ 1kHz Residual noise: -85dBu Crosstalk (@ 1kHz)Mic – Mic: <-80dB @ 1kHz CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge	Each	264,705.00	264693	264667	264667
16.35	Public Address and Voice Alarm (Zone Based)					
16.35.1	Supply, Installation, Testing & Commissioning of Integrated Public Address and Voice Alarm with built-in or separately installed 500W Class-D amplifier, complete with microphone bases/call station and other accessories to work as an single unit 8-zone VA/PA system of following technical specification or equivalent: Zone/ Speaker Group: 8 Frequency response : 100 Hz- 13 KHz Impedance: 250- 600 ohm Amplifier : 500W, Class-D Power supply: 15-30 Vdc or 220-240 Vac, 50 Hz Operating Temperature & humidity: -10°C~+50°C (14°F~+122°F) & <95% without condensation CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge	Each	410,488.00	410473	410447	410447

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.35.2	Supply, Installation, Testing & Commissioning of Microphones Bases / Call Station including power supply and other accessories of following technical specification or equivalent: Zone/ Speaker Group: 8 Frequency response : 100 Hz- 10 KHz Impedance: 600 ohm Power supply: 15-24 Vdc CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge	Each	82,602.00	82595	82568	82568
16.35.3	Supply, Installation, Testing & Commissioning of 8 zone selection switch / 8 zone extender including accessories of following technical specification or equivalent: Zone/ Speaker Group: 8 Dual channel operation 500W/100V output capacity Power supply: 15-30 Vdc or 100-240 Vac, 50 Hz Operating Temperature & humidity: -10°C~+50°C (14°F~+122°F) & <95% without condensation CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge	Each	221,323.00	221312	221286	221286
16.35.4	Supply, Installation, Testing & Commissioning of Mixer Pre-Amplifier of following technical specification or equivalent: 12 Inputs and 4 Outputs Impedance: 2.2 KOhm for mono channel mic, for line 33 KOhm , for stereo 22 KOhm SNR: >96dB Frequency Response: 50 Hz-18 KHz CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge	Each	250,328.00	250317	250290	250290

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
16.35.5	Supply, Installation, Testing & Commissioning of 4 Channel Amplifier of following technical specification or equivalent: Rated Power : 4x 120-125W RMS Amplifier Output: 70/100V Frequency Response: 80Hz-18KHz SNR: >85dB Power supply: 220-240 Vac, 50 Hz Operating Temperature & humidity: -10°C~+45°C & <95% without condensation CE Certified/UL Listed Country of Origin: USA, UK, Japan, EU Countries; suitable for use in tropical country like Bangladesh. Model & sample to be approved by the Engineer in charge	Each	284,378.00	284366	284340	284340

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Subhead 17

Digital PABX & Internet System

Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.1	<u>DIGITAL PABX SYSTEM</u>					
17.1.1	<u>6+8 LINE</u> Supply, installation, testing & commissioning of 6+8 line (extension capacity 24 line) digital PABX system. Basic unit : 6+8 line PABX system Hardware: (CPU card, T&T/ Land Line card, power supply unit, & casing) Software : System operating software & billing software. Features: Direct inward station access including necessary, AUTO / DISA (voice), CID (caller ID), card co-line card, etc.. built in billing system automatic fax / phone switching key telephone interface day / night service, total call report by extension, individual call report by extension, total call report by CO, individual call. Suitable for use in tropical country like Bangladesh complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Model & sample to be approved by the Engineer in charge.	Each	18,538.00	18,533	18,517	18,517
17.1.2	<u>6+16 LINE</u> Supply, installation, testing & commissioning of 6+16 line (extension capacity 24 line) digital PABX system. Basic unit : 6+16 line PABX system. Hardware : CPU card, T&T/ Land Line card, power supply unit & casing. Software : System operating software & billing software. Features : Direct inward station access including necessary, AUTO / DISA (voice), co-line card, CID (caller ID) etc. built in billing system automatic fax / phone switching key telephone interface day / night service, total call report by extension, individual call report by extension, total call report by CO, individual call.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Suitable for use in tropical country like Bangladesh complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Model & sample to be approved by the Engineer in charge	Each	27,996.00	27,991	27,975	27,975
17.1.3	<u>6+32 LINE</u> Supply, installation, testing & commissioning of 6 +32 line (extension capacity 48 line) digital PABX system. Basic unit : 6+32 line PABX system. Hardware : CPU card, T&T/ Land Line card, power supply unit & casing. Software : System operating software & billing software. Features: Direct inward station access. including necessary, AUTO / DISA (voice), co-line card, CID (caller ID) etc.. built in billing system automatic fax / phone switching key telephone interface day / night service, total call report by extension, individual call report by extension, total call report by CO. individual call. Suitable for use in tropical country like Bangladesh complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Model & sample to be approved by the competent authority.	Each	39,346.00	39,340	39,324	39,324
17.1.4	<u>8+48 LINE</u> Supply, installation, testing & commissioning of 8+48 line (extension capacity 16+120 line) digital PABX system. Basic unit : 8+48 line PABX system. Hardware : CPU card, T&T/ Land Line card, power supply unit & casing. Software : System operating software & billing software. Features: Direct inward station access. including necessary, AUTO / DISA (voice), co-line card, CID (caller ID) etc.. built in billing system automatic fax / phone switching key telephone interface day / night service, total call report by extension, individual call report by extension, total call report by CO. individual call.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Suitable for use in tropical country like Bangladesh complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Model & sample to be approved by the competent authority.	Each	124,849.00	124,841	124,825	124,825
17.1.5	<u>16+120 LINE</u> Supply, installation, testing & commissioning of 16+120 line (extension capacity 240 line) digital PABX system. Basic unit : 16 + 120 line PABX system. Hardware : CPU card, T&T/ Land Line card, power supply unit & casing. Software : System operating software & billing software. Features : Direct inward station access including necessary, DISA (voice), co-line card, CID etc.. built in billing system automatic fax / phone switching key telephone interface day / night service, total call report by extension, individual call report by extension, total call report by CO, individual call. Suitable for use in tropical country like Bangladesh complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Model & sample to be approved by the Engineer in charge.	Each	431,548.00	431,535	431,518	431,518
17.1.6	<u>16+208 LINE</u> Supply, installation, testing & commissioning of 16+208 line (extension capacity 32+960 line) Digital hybrid Real IP PABX system. Basic unit : 16 + 208 line PABX system. Hardware : CPU card, T&T/ Land Line card, power supply unit & casing. Software : System operating software & billing software.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Features : Direct inward station access including necessary, DISA (voice), co-line card, CID etc.. built in billing system automatic fax / phone switching key telephone interface day / night service, total call report by extension, individual call report by extension, total call report by CO, individual call, DID, ISDN connectivity, E&M, UCD, TVP, IP Switching, TDM switching, VoIP, XDP, CPC signal detection etc. Suitable for use in tropical country like Bangladesh complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Model & sample to be approved by the Engineer in charge.	Each	582,880.00	582,864	582,847	582,847
17.2	<u>STANDARD MASTER TELEPHONE SET</u>					
17.2.1	<u>8+16 button DSS control</u> Supply & installation of standard master telephone set including display, date, time & 8+16 button DSS control. Suitable for use in tropical country like Bangladesh complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Model & sample to be approved by the competent authority. For use in 3+8 line to 6+24 line.	Each	6,394.00	6,394	6,391	6,391
17.2.2	<u>16+24 button DSS control</u> Supply & installation of standard master telephone set including display, date, time & 16+24 button DSS control. Suitable for use in tropical country like Bangladesh complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Model & sample to be approved by the competent authority.					
17.2.2.1	For use in 8+32 line system	Each	9,547.00	9,547	9,544	9,544
17.2.2.2	For use in 16+120 line system	Each	12,069.00	12,069	12,066	12,066
17.2.3	<u>IP PABX Master Set</u>					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply & installation of standard IP master telephone set including display, date, time & DSS control. Standalone IP Centrex/PBX Functionality Integrated Voicemail System Auto Peer Discovery Automated Device Provisioning Class 4 Service IVR Support Customizable Distinctive Ring Tones Advanced SIP Support Support for Multiple Call Routes Route Failover Support Unified Messaging and Call Forwarding. Suitable for use in tropical country like Bangladesh complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Model & sample to be approved by the Engineer in charge.	Each	50,595.00	50,594	50,592	50,592
17.2.4	Supply & installation of IP master telephone set for the following specification & features as per direction of the Engineer in charge. Specifications ▪ Display - Primary (larger) : 5.0" color, 800 x 480 pixel - Secondary : 2.3" Color, 160 x 240 pixel ▪ 10 physical buttons on main screen, 6 physical buttons on secondary screen (dual LEDs - red, green) ▪ 4 softkeys ▪ 2 USB ports (1 USB A, 1 USB C) ▪ Wi-Fi & Bluetooth ▪ Hard buttons for phone, end call, messages, contacts, history, home, navigation cluster, headset, speaker, volume, mute ▪ LEDs for speaker, mute, headset, message, history ▪ All 96 buttons are accessible, without a physical expansion module (on main screen, or secondary screen) ▪ J100 Expansion Modules Support - Secondary screen is the first effective Expansion Module - 2 hardware J100 Expansion Modules ▪ Wideband audio in handset and headset ▪ SuperWideBand RJ9 Headset ▪ Full duplex speakerphone .	Each	68,040.00	68,039	68,036	68,036

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.3	<u>SINGLE LINE TELEPHONE SET</u>					
17.3.1	<u>NORMAL USE</u>					
	Supply, installation, testing & commissioning of single line telephone set for normal use with provision volume up+down, redial, flash etc.. complete. Suitable for use in tropical country like Bangladesh complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Model & sample to be approved by the Engineer in charge.	Each	1,602.00	1,601	1,599	1,599
17.3.2	<u>EXCLUSIVE USE</u>					
17.3.2.1	Supply, installation, testing & commissioning of single line telephone set for executive use with provision volume up+ down, redial, flash etc.. including display with CID system (Min 30 Stations) complete. Suitable for use in tropical country like Bangladesh complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Model & sample to be approved by the Engineer in charge.	Each	2,737.00	2,737	2,734	2,734
17.3.2.2	Supply, installation, testing & commissioning of single line telephone set for executive use with provision volume up+ down, redial (Min 20 stations), flash, one touch dial (Min 10 stations), phonebook (Min 50 numbers) etc. including display with CID system (Min 50 stations) complete. Suitable for use in tropical country like Bangladesh complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Model & sample to be approved by the Engineer in charge.	Each	4,124.00	4,123	4,121	4,121

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.3.3	Supply, installation, testing & commissioning of IP Proprietary telephone set for executive use with provision volume up+ down, redial, flash, full duplex speaker, 2 Ethernet port, co button etc.. including display with CID system complete. Suitable for use in tropical country like Bangladesh complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Model & sample to be approved by the Engineer in charge.	Each	9,547.00	9,547	9,544	9,544
17.3.4	Supply, installation, testing & commissioning of IP PABX telephone set for executive use with following features Specifications • 2.8" (diagonal) color display— 320 x 240 pixels • Multiple line phone with four red / green line / feature indicators around display • 4 Context sensitive soft keys • Hard buttons for phone, messages, contacts, history, home, navigation cluster, headset, speaker, volume, mute • LEDs for speaker, mute, headset, message, history • Wideband audio in handset and wired headset • Full duplex speakerphone & handset • Ergonomic hearing aid compatible handset supports TTD acoustic coupler • Message waiting indicator • Mute key with optional mute alerting	Each	15,793.00	16,229	16,225	16,225
17.3.5	Supply, installation, testing & commissioning of Smart IP Phone and Corded Handset Kit for executive use with following features					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Form Factor ▪ All Glass, no visible buttons, volume buttons on the side; Small footprint— excellent use of desktop space ▪ Optional handset (corded or cordless Bluetooth handset with a magnetic switch hook) ▪ Hinged stand for smooth multi-angle positioning; Desk stand or a wall-mount stand Display, Display size & Orientation 8”; Portrait ,Display resolution: 1280 x 800 pixel, Capacitive Touch with 24-bits color depth Touch Screen , Audio codecs: Wideband audio available on all transducers, handset, headset, and handsfree. Supported codecs: G.722, G.711, G.729, G.726, Opus Microphones 4 Wideband audio Buttons & Status Indicators ▪ No mechanical dial-pad ▪ Message Waiting Indicator Connectors / Ports Headphone connector ports ▪ 3.5 mm headset connector ▪ RJ9 headset connector for a high-quality wired headset Supported headsets ▪ Wideband Bluetooth headsets ▪ 3.5 mm headsets ▪ RJ9 headsets ▪ USB headsets HDMI Micro HDMI 2.0 port to extend display Video codecs Support the H.264 codec with the following encoding profiles: ▪ High Profile AVC ▪ Baseline Profile AVC Handset ▪ 1x Handset cradle connector USB 3.0 Type-C General purpose port: USB flash drive for data transfer to and from the device. Support is limited to USB flash drives with up to 32 GB of storage. Multi-port USB hub, USB headset, Mouse, Keyboard, USB Camera, Android devices (Support is only limited to charging the Android device. Data transfer is not supported). ▪ Up to 900 mA if using Class 4 (802.3at) PoE switch ▪ Up to 100 mA if using Class 3 PoE switch Memory ▪ 32 GB flash memory ▪ 2 GB of RAM	Each	93,890.00	93,887	93,883	93,883
17.3.6	Supply, installation, testing & commissioning of IP Phone and Corded Handset kit for executive use with following features					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Specifications: Form Factor ▪ Combination of a mechanical keypad and a glass display, volume buttons on the front; Small footprint— excellent use of desktop space ▪ Optional handset (corded or cordless Bluetooth handset with a magnetic switch hook) ▪ Hinged stand for smooth multi-angle positioning; Desk stand or a wall-mount stand Display. Display size & Orientation- 5"; Landscape. Display resolution 720 x 1280-pixel, Capacitive Touch with 24-bits color depth Touch Screen, Audio Codecs: Wideband audio available on all transducers, handset, headset, and handsfree. Supported codecs: G.722, G.711, G.729, G.726, Opus Microphones -4 Wideband audio Buttons & Status Indicators ▪ Mechanical dial-pad available ▪ Message Waiting Indicator Connectors / Ports Headphone connector ports ▪ 3.5 mm headset connector ▪ RJ9 headset connector for a high-quality wired headset Supported headsets ▪ Wideband Bluetooth headsets ▪ 3.5 mm headsets ▪ RJ9 headsets ▪ USB headsets HDMI Micro HDMI 2.0 port to extend display Video codecs Support the H.264 codec with the following encoding profiles: ▪ High Profile AVC ▪ Baseline Profile AVC Handset ▪ 1x Handset cradle connector USB 3.0 Type-C General purpose port: USB flash drive for data transfer to and from the device.	Each	63,837.00	63,834	63,830	63,830
17.4	<u>EXTENSION LINE CARD</u> Supply, installation, testing & commissioning of extension (24 line) card with caller id compatible to the existing one. Suitable for use in tropical country like Bangladesh complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Model & sample to be approved by the Engineer in charge.	Each	36,572.00	36,571	36,571	36,571
17.5	<u>IP PABX Software</u> Supply, installation, testing & commissioning of IP PABX software for the following specification & features as per direction of the Engineer in charge.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.6	Free PBX web-based interface for managing phone system. Includes enterprise phone system features, such as IVRs, conferencing, dial by name directory, call queues, voicemail, and more. Low-cost calling through SIP trunking or VoIP providers. Use any SIP-based IP phone or a softphone. Use D-Series IP phones for easy setup and advanced features. Connect traditional phones and lines with Digium telephony cards or gateways. Operating system included. Capacity 50-800 users. IP-PABX Communications Server Supply, installation, testing & commissioning of IP-PABX Server under the following specifications & features as per direction of the Engineer in charge Technical Specifications: The system should be a converged communication System with ability to run TDM and IP on the same platform using same software load based on Linux OS and server and Gateway architecture. For seamless integration of all the offered IP PBX System components like IP PBX, Voice Gateway, Voice Mail, IP Phones and Operator Phone must be from the same OEM. The IP PBX system should support contact center application in future and should be from the same OEM. System shall be non-blocking and open standard (based on H.323 and SIP). The call control system should be fully redundant solution. The Solution should be capable of supporting at least 700 users from day 1 and expandable up to 2000 user in future. The systems should be able to integrate with Elevator/Lift Phone (Analog/SIP). The system should be capable of deployment on virtualized platforms like VMWare/Hyper-V etc.. The OEM must be in leaders' quadrant in latest Gartner Magic Quadrant for UC report. Documentary evidence for the same should be provided.	Each	435,710.00	435,701	435,701	435,701

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	System should provide call control, mobility, IM and presence, Web-Collaboration, Messaging and centralized licensing. The system should support standards-based multi-site networking, using QSIG, H.323 trunks or advanced networking, to interoperate with other PABX's, allowing feature transparency. Voice CODEC support G.711, G.729, G.729a & G.722 or any less utilization bandwidth across WAN and LAN Video CODEC: H.264 or Equal System should have built-in SIP and H.323 gatekeeper functionality without the need to put any additional hardware System should support SIP trunking to Internet Telephony Service Providers, allowing non-SIP phones to make SIP calls The system should support at least 30 remote sites on the same platform through gateways. The system should provide complete inbuilt encryption capabilities or features without any external firewall, with the ability to encrypt all traffic (media and call control signaling) between IP phones, soft phones, call controllers and all other associated endpoints via a strong encryption algorithm like IPSec or SRTP etc.. System should be able to provide centralized voicemail with the option of Distributed centralized voicemail in case of connectivity failure. The system should support BRI/ PRI/ T1/ E1/Analog/IP/SIP Trunks. The communication server should offer BHCC (Busy Hour Call Completion) of at least 7200 per server to ensure superior traffic handling capacities. The offered system should be modular in design. The architecture of IP PBX should be capable of seamless migration to its maximum capacity by simply adding licenses/peripheral cards on the set of control server without compromising on any functions/ features of this system or any degradation of service.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	The system should be able to provide hybrid end points i.e. both IP and TDM. They should also provide support for 100% TDM endpoints. The proposed communication system should have a highly secured, encrypted IP supporting hybrid Trunks e.g. Analog CO, Digital Trunks (BRI and PRI), IP Trunks (H.323/SIP) System should have in built-in DHCP Server, which should be able to give IP Addresses to the endpoints. System should support built-in Remote access server (RAS) functionality. System should support Diffserv for QoS (Quality of service) for the voice packets traveling over data networks System should support standards-based CTI integration with 3rd party applications System should support WebRTC based application for Web Collaboration users for Windows and Mac OS Should support Active Directory integration for directory synchronization and user authentication. The offered system should have a valid TEC approval. TEC approval certificate copies for ISDN connectivity should be enclosed along with the offer. DESIRED FEATURES & FACILITIES OF IP PBX: The offered solution should provide the following features as a part of its telephony functions. Call Coverage Call Forwarding Call Hold Call Intrude Call Park DND Ring Back When Free Suspend Call Waiting Distinctive and Personalized Ringing					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Toggle Calls Account Codes Call Barring Bridged Appearance Group Paging Hot Desking Mobile Twinning Multiple Appearance Directory Number (MADN) Intrusion Warning Tone Alternate Route Selection Flexible numbering Schemes Time of Day and Date Routing of Calls Call Recording PIN Restricted Calling Time Profiles Queue announcements Call Detail Recording SMDR (Station Messaging Detail Record) Fax on demand integration Station Call – User can dial any extension anywhere in central location and other distributed location by dialing simple extension number. Support Tone dialing from an extension. Authorization Codes - 5-7 digit authorization code to make outgoing toll calls for ensuring no misuse of the system. Automatic Call Back – User can register ACB feature to any extension of the offered system. Call pickup within the group as well as outside the group					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Alternate Routing – Automatically re-route calls which encounter a busy trunks on the initial route. Automatic digital translation is carried out by the system. Provides the possibility of reaching external destinations via different routes. Call Detail Recording – Records detailed call information on all incoming and outgoing calls on specified trunk groups and stations, including those administered for intra-switch recordings, and send this information to any printer of time/duration as and when required. Necessary hardware and software if required to be quoted separately. Class of Service – Defines whether or not voice terminal users may access the following features and functions: Automatic Call-back, Call Forwarding, Call Forward, Busy/Don't Answer, Data Privacy, Extended Forwarding, Extended Call Forward Busy/Don't Answer, Priority Calling, Restrict Call Forwarding Off-Net, Personal Station Access, Trunk –to-Trunk, Transfer Restriction Override, Off-Hook Alert & Console Permission. DID/DOD (Direct Inward/Outward dialing) – The proposed system must support direct inward dialing for external parties to call in. Direct Inward Station Access – This feature must be optionally available, allowing an outside caller to access switch features by dialing a special telephone number without attendant assistance, it should permit access to the server and long distance facilities from off-premise stations. For security, there should be the option of turning off this feature. Day/Night Trunk Control – To reduce cost and improve system security it should be possible to restrict the access to certain trunks depending on time of day. Distinctive Ringing – To provide audibly different ringing patterns between internal, external and special feature calls. Flexible numbering plan – Support up-to 2-15 Digit for an extension number and allow phone number assigned to a station to a station to be changed through software.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	System Abbreviated dialing - To have the ability to store a list of frequently called numbers that will be available on a system wide basis to all users. The system should support internal MOH (Music on Hold), which should be uploaded using the .Wav file and should have an audio input port for external MOH connectivity. CLI (Caller Line Identification) facility (CLIP/CLIR) - Calling Numbers (internal & external) should be displayed on all Analog extensions (FSK support phone). Web collaboration for desktop and application collaboration, whiteboarding and document sharing. It should be possible to escalate from an audio call to web collaboration. It should provide a document library possible to upload documents, presentations and pictures to a document library for quickly sharing during a web collaboration session. Terminal Support System should support the following type of terminals: Analog Phones Digital Phones IP Hardphones IP/SIP Softphones Video Hard/Softphone Wireless IP Phones (802.a/b/g/n) 3rd party SIP phones RFC3261 Compliant Trunk Support System should support following types of trunks: Analog Trunks PRI BRI T1/ E1/ E1R2 Voicemail Features System should have inbuilt voice mail system					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Voicemail to email option should be available System should support unified messaging with Microsoft Exchange or any IMAP compliant email application. System should support voicemail access through web-browser External Fax server integration should be possible. VM should support text-to-Speech functionality VM should support Dial-by-Name functionality VM should support Auto Attendant IVR functionality should be available Conferencing Features The system should have built-in 128 party Ad-Hoc or Meet-Me audio conferencing bank from day 1. Multiple conferences with variable number of users should be possible within each of the conferencing banks. System should be able to generate detailed reports about the conference. System should be able to send emails to all the participants giving them the conferencing details System should support PIN based security for conference calls. System should support scheduling of conference call. Call Recording System should have in-built capability to manual, automatically as well as time based record and store calls into any voicemail box or a central database, for later retrieval, sorting, searching through a web-based browser interface. Recordings should be able to be made on the basis of: User ID Account code Hunt Group Caller ID					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Incoming call route Time profiles System should support automatic deletion of oldest recordings, if needed. System should provide archival of recordings by automatically writing them to a DVD+RW drive. System should support G.726 minimum 16kbps ADPCM standard for compressing and storing recordings, providing the best compromise between CPU loading and storage space. Management Interface System should be able to be configured and administered using a GUI based application System should support SNMP based network management In case SNMP management is not available, system should be capable of sending event notifications to up-to 3 email addresses, each with a different set of alarms UC Functionalities Same Unified Communications (UC) client that provides users with real time collaboration capabilities Support for Windows and Mac OS Support for Android and iOS devices Smartphones The Softphone should provide full call control from an iPhone or Android powered smartphone. Make and receive phone calls and instant messages, host and attend audio conferences. See employee availability via presence, and use Geo-tracking to determine the location in the field. All of this is done using the corporate directory, so there are no personal cell phone numbers will be involved. The Softphone application should be downloadable from Google Playstore or Apple iTunes without any additional cost for any number of device.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Solution should provide a "presence" application for users, so that they can see the availability status of their contacts in their contact list. The common supported status for this application should be available, busy, idle, away etc.. The instant messaging application should support manual setting of user status to: Available, Away, Do Not Disturb (DND) etc.. Shall provide support for open protocols like XMPP.	Each	2,838,102.00	2,838,102.00	2,838,102.00	2,838,102.00
17.7	IP PABX Voice Gateway Supply, Installation, Testing , Commissioning of Voice Gateway under the following specifications & features as per direction of the Engineer in charge Technical Specifications: Technical Feature : GW should support X.21/V.35 WAN Interface. GW should have relays for door entry systems. GW should be 19" rack mountable. GW should have in-built 2 port auto-sensing LAN Switch (Layer 3) GW should have Integral Static or Dynamic (RIP I/II) routing for both Internet and Branch-to-Branch solutions GW should support Frame Relay WAN protocol GW should support the following protocols: PPP, ML-PPP, CHAP, PAP, ARP, BACP GW should be able to provide redundancy to all users in case of failure of redundant servers GW should support at least 148 DSP channels on each gateway. Security : • E911 • PIN-restricted terminals • CLI call-back for Remote Access • Integral Firewall • Network Address Translation (NAT)					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	• PAP/CHAP authentication protocols • Time profiles • VPN support • System Management Audit Trail Networking Protocol : Q.Sig Networking over T1 and IP • Uniform Dial Plan • Preferred Edition Networked Messaging • Proactive remote monitoring via SNMP • VPN support - IPSec or L2TP • SIP trunking to low-cost Internet Telephony Service Providers (ITSP) • Multi-site option (up to 1000 users across 32 sites) features such as Busy Lamp Field, Paging, Desk-to-desk calling, Calling/connected name and number, Hold and Transfer, Centralized Voicemail, Internal Directory, Absent Text Message, Anti-Tromboning, Remote Hot-Desking and Distributed Hunt Groups. Data Functionality • Bandwidth on demand • DHCP server • Integral data router – RIP-2 • Internet Access • LAN-to-LAN routing • Multi-Link PPP • Remote Access Server (RAS) Operating Temperature 32° to 104°F (0° to +40°C). 95% relative humidity, non-condensing Power Supply 100-240V AC, 50/60Hz, 81-115VA, 2.5A maximum	Each	473,542.00	473,542.00	473,542.00	473,542.00

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.8	Video IP Phone Supply, installation, testing & commissioning of Video IP Phone under the following specifications & features as per direction of the Engineer in charge Technical Specifications: Display: Should have 8" or more touch screen with 1200x800 px resolution color display with an integrated minimum 2 megapixels HD camera with 1080p30 resolution Integral Switch: Should have integrated 2-port 10/100/1000 . RJ45 primary Gigabit Ethernet (10/100/1000 Mbps) PoE LAN port RJ45 secondary Gigabit Ethernet (10/100/1000 Mbps) port for a computer Protocol: Should support SIP for signaling Security: Should support SRTP and TLS for encryption and security Audio Codec: Wideband audio G.711, G.729, G.722, G.726 Video Codec: H. 264 Internet Protocol (IP): Should support Static, DHCP IP Address Caller ID: Enables the delivery of a caller's identity to a user via the phone Call History: History of Missed, Dialed and Received calls Speaker phone: For two-way hands-free communication Headset and other Ports: Suitable Headset port with required convertor. • 1X RJ9 analog headset port • 1X 3.5 mm audio jack socket • 1X USB Type-A port Distinctive Ring tone: Downloadable ring tones, Downloadable Wallpapers Wireless Support - optional: should support wireless access point mode, 5GHz Wireless 802.11a/b/g/n/ac, Hotspot, Bluetooth 4.2 supporting					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Support Android or OEM software, support install third party applications on OEM Store or Google Play™ store. The system administrator can restrict installation of certain applications	Each	221,323.00	221,323.00	221,323.00	221,323.00
17.9	Operator Phone with 24 Port Expansion Module Supply, installation, testing & commissioning of Operator Phone with 24 Port Expansion Module under the following specifications & features as per direction of the Engineer in charge Technical Specifications: Color display – 2.8 inches x 2.1 inches (7.0 cm x 5.3 cm) – Diagonal width: 3.5 inches (8.8 cm) 8 buttons with dual LEDs (red, green), 4 softkeys Hard buttons for phone, messages, contacts, history, home, navigation cluster, headset, speaker, volume, mute LEDs for speaker, mute, headset, message, history 24 administrative buttons High definition audio quality Integrated Gigabit Ethernet interface Headset support Support up to three 24-button Expansion Modules Optional Wi-Fi® / Bluetooth Wideband audio in handset and headset Full duplex speakerphone Message waiting indicator Gigabit Ethernet (10/100/1000) line interface, Second Ethernet interface 10/100/1000 Mbps PoE Class (IEEE 802.3af) registers as class 1 device and supports 802.3az	Each	151,962.00	151,962.00	151,962.00	151,962.00
17.10	Providing & fixing of Main Distribution Frame (MDF) including LSA plus, steel frame, powder coated steel box etc. accepted and approved by the Engineer in charge-in- charge.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.10.1	Capacity: 100 Lines	Each	9,837.00	9,831	9,815	9,815
17.10.2	Capacity: 150 Lines	Each	13,305.00	13,299	13,283	13,283
17.10.3	Capacity: 250 Lines	Each	17,655.00	17,650	17,634	17,634
17.11	Providing & fixing of Sub Distribution Frame (SDF) including LSA plus, steel frame, powder coated steel box etc. accepted and approved by the Engineer in charge-in- charge.					
17.11.1	Capacity: 20 Lines	Each	3,468.00	3,462	3,447	3,447
17.11.2	Capacity: 30 Lines	Each	4,099.00	4,093	4,077	4,077
17.11.3	Capacity: 50 Lines	Each	5,990.00	5,985	5,969	5,969
17.12	<u>DISA(Dirrect Inward System Access) CARD</u> Supply, installation, testing & commissioning of DISA (Minimum 16 minutes recording capacity and 4 channel message capacity) card compatible to the existing one. Suitable for use in tropical country like Bangladesh complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Model & sample to be approved by the Engineer in charge.	Each	32,158.00	32,158.00	32,158.00	32,158.00
17.13	<u>DSP Card</u> Supply, installation, testing & commissioning of DSP card compatible to the existing one. Suitable for use in tropical country like Bangladesh complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified. Model & sample to be approved by the Engineer in charge.					
17.13.1	16 Channel	Each	44,769.00	44,769.00	44,769.00	44,769.00
17.13.2	64 Channel	Each	139,351.00	139,351.00	139,351.00	139,351.00
17.14	<u>INTERNET SYSTEM</u> <u>SERVER</u>					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.14.1	Supply, installation, testing & commissioning of server with following specification or equivalent as per direction of the Engineer in charge. Processor: Intel Xeon E-2124 Chipset: Intel C242 Chipset Clock Speed 3.3GHz/4-core/8MB/71W Processor or higher RAM : 16GB (2 x 8GB) RAM type: Single Rank x8 DDR4-2666 Unbuffered Memory RAM slot: 4 RAM: max 64GB HDD: 2 x 1TB HDD type: HPE 6G SATA 7.2K LFF (3.5in) Non Hotplug HDD (2x 3.5in HDD Bay: At least 8TB (2x4TB) RAID Controller: HPE FIO Enable Smart Array SW RAID (RAID 0/1/5/10) Optical device: SATA DVD-RW Graphics: Integrated Matrox G200 Video Graphics Networking: Dual Port HPE 1Gb Ethernet Adapter i/o Ports: 2 rear USB 3.0, 2 front USB 2.0, and 1 internal USB 3.0 Bays: 2 Power supply: 290W FIO PSU Form factor : 1U/2U Rack Server Environment: Min Operating Temperature : 50 °F ; Max Operating Temperature : 95 °F ; Humidity Range Operating : 8 - 90% (non-condensing)	Each	202,028.00	196,568.00	196,552.00	196,552.00
17.14.2	Supply, installation, testing & commissioning of server with following specification or equivalent as per direction of the Engineer in charge.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Processor: 2 x Intel Xeon-Silver (2.1GHz/8-core/85W) or Higher Chipset: Intel C622/C621 Memory: minimum 2x16 GB DDR4 RAM minimum 2x1.2TB SAS 10K 2.5in SC ENT HDD Network Interface: 4 x Gigabit Ethernet RAID Controller- Integrated RAID Controller (12G SAS Modular Controller) with 2GB FlashBacked Write Cache (RAID 0,1,10,50,6,60) Form Factor- 2U Rack, form factor with Rail Kit & Cable Management Arm Up to 6PCIe 3.0 slots Environment: Min Operating Temperature : 50 °F ; Max Operating Temperature : 95 °F ; Humidity Range Operating : 8 - 90% (non-condensing) 3 years warranty.	Each	548,830.00	534,007.00	533,991.00	533,991.00

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.14.3	Supply, installation, testing & commissioning of server with following specification or equivalent as per direction of the Engineer in charge- minimum two (2) Intel Xeon Scalable Processors, processor should have minimum 2.3GHz clock speed & 20 cores CPU each. Must have at least 30 MB L3 Cache. Should support Up to two 3rd Gen Intel Xeon Scalable processors (with up to 40 cores per socket). Intel chipset compatible with the processors, support up to two GPUs. Server should have 4 Nos 1.2 TB 12G SAS 10K RPM SFF HDD and should support Up to 10 SAS/SATA or NVMe disk drives along with M.2 boot options up to 960 GB with optional hardware RAID. RAID controller should support RAID 0, 1, 5, 6, 10, 50, and 60 with minimum 4GB FBWC (16Drive) write cache module. Should have at least 32x DDR4 DIMMs for up to 4 TB of capacity using 128 GB DIMMs, or 16x DDR4 DIMMs + 16x Intel Optane persistent memory modules for up to 10 TB of memory with minimum 64 GB of DDR4 Memory. Support for advanced memory redundant technologies like Advanced error-correcting code (ECC) and memory mirroring. Should have 2*10 GbE (embedded) BaseT LAN ports with Intel i350 Quad Port 1Gb Adapter Up to 3 PCIe 4.0 slots plus a modular LAN on Motherboard (mLOM) slot Should support out of band upgrades, Agentless out-of-band management, integrated diagnostics and Power monitoring and reporting. Should support industry standard management protocols like IPMI v2 and SNMPv3 . Cloud operations platform that consists of optional, modular capabilities of advanced infrastructure, workload optimization.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.15	One 1-Gbps RJ-45 management port Multiple management interfaces including web user interface and command line interface, Hardware Policy based security Should support anti-counterfeit measures to guarantee authenticity, System Lock Down, Secure Debug BIOS and BMC Comms. 1 serial port, 2 USB 3.0 ports, 1 VGA video port Hot swappable redundant fans The server should have Redundant Power Supplies including Rail Kit and cable management. Should support Microsoft Windows Server, Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), VMware. Form Factor : Rack mountable and maximum 1U Manufacturer's warranty should be minimum 3 (Three) years warranty for OEM technical solution support, Patch & New Software Upgrade, RMA replacement should be provided for this unit from the date of commissioning. <u>Firewall</u> Supply, installation, testing & commissioning of firewall with following specification & features or equivalent as per direction of the Engineer in charge. Minimum 20 x GE RJ45 ports (including 2 x WAN ports, 1 x DMZ port, 1 x Mgmt port, 2 x HA ports, 14 x switch ports), 2 x Shared Media pairs (Including 2 x GE RJ45 ports, 2 x SFP slots). Max managed APs (Total / Tunnel) 64 / 32 IPS Throughput: 500 Mbps or above NGFW Throughput: 360 Mbps or above Threat Protection Throughput : 250 Mbps or above 24x7 Comprehensive Support, Advanced Hardware Replacement (NBD), Firmware and General Upgrades, VPN, Traffic Management, UTM Services Bundle (Application Control, IPS, AV, Botnet IP/Domain, Mobile Malware Service, Web Filtering, Antispam, FortiSandbox Cloud including Virus Outbreak and Content Disarm & Reconstruct Services	Each	1,673,333.00	1673296	1673279	1673279
		Each	478,839.00	478825	478808	478808

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.16	CORE ROUTER					
17.16.1	Supply, installation, testing & commissioning of router with following specification & features or equivalent as per direction of the Engineer in charge. System features : • Aggregate Throughput: 35 Mbps to 75 Mbps or above • Total onboard WAN or LAN 10/100/1000 ports: 2 • RJ-45-based ports: 2 • SFP-based ports: 1 • Default memory double-data-rate 3 (DDR3) error-correction-code (ECC) DRAM (Combined control/services/data planes): minimum 4 GB • Default flash memory: minimum 8 GB • External USB 2.0 slots (type A) • Serial console port - RJ45 (up to 115.2 kbps) 1 (combo CON/AUX port) • Serial auxiliary port - RJ45 (up to 115.2 kbps) 1 (combo CON/AUX port) • Power-supply options External: AC Only • AC input voltage 100 to 240 VAC auto ranging • AC input frequency 50 Hz • AC input current range, AC power supply (maximum): 1.5 to 0.6A • AC input surge current: 90 A peak and less than 3 Arms per half cycle • Typical power (no modules) (watts): 24 • Maximum power with AC power supply (watts): 90 • MTBF (Hours) :593270 or above Safety: UL 60950-1, CAN / CSA C22.2 No. 60950-1, EN 60950-1, AS / NZS 60950-1, IEC 60950-1.	Each	208,207.00	202,583.00	202,575.00	202,575.00

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.16.2	Supply, installation, testing & commissioning of router with following specification & features or equivalent as per direction of the Engineer in charge- High-performance multi-core processors; Aggregate Throughput/IMIX Traffics / Concurrent WAN service Throughput: minimum 100 Mbps / Upgradable 300 Mbps. DRAM: Minimum 4 GB upgradable to 16 GB Flash Memory :Minimum 4 GB upgradable to 16 GB Form Factor: Rack Mountable with Rack Mounting Kit Router should have Minimum 3 x 1GE WAN Port where 2 x 1GE Copper or SFP and 1 x 1GE Copper based Routing Port, Minimum 4 x 1GE Copper based Switching Port. Management : 1 x console and 1 x Gigabit Ethernet port for device management; Serial : 1 x Auxiliary port; USB : 1 x USB 2.0 Type A port; Should support Layer 7 context-aware / application aware Firewall Support Gigabit Ethernet, T1/E1, Channelized E1/T1; IPv4, IPv6, static routes, Routing Information Protocol Versions 1 and 2 (RIP and RIPv2), Open Shortest Path First (OSPF), Border Gateway Protocol (BGP), BGP Router Reflector, Intermediate System-to-Intermediate System (IS-IS), Multicast Internet Group Management Protocol Version 3 (IGMPv3), Protocol Independent Multicast sparse mode (PIM SM), PIM Source Specific Multicast (SSM), Distance Vector Multicast Routing Protocol (DVMRP), IPv4-to-IPv6 Multicast, MPLS, Layer 2 and Layer 3 VPN, IPsec, Layer 2 Tunneling Protocol Version 3 (L2TPv3), Bidirectional Forwarding Detection (BFD), IEEE802.1ag, and IEEE802.3ah; Generic routing encapsulation (GRE), Ethernet, 802.1q VLAN, Point-to-Point Protocol, Multilink Point-to-Point Protocol, High-Level Data Link Control (HDLC), Serial (RS-232, RS-449, V.35), and PPP over Ethernet; QoS, Class-Based Weighted Fair Queuing, Weighted Random Early Detection, Hierarchical QoS, Policy-Based Routing, Performance Routing and network based application detection.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Minimum 2 Network Interface Module Slots; Support On-Line Insertion (OIR) for Network Interfaces Modules to reduce downtime during fault/repair/upgrade; Support Modular OS on open platform; Should have SNMP, RMON, Syslog, NTP, DNS; Telnet and SSH; Support application performance monitoring; Should have Network Flow Statistic, Service Level assurance feature. Manufacturer's warranty should minimum 3 (three) years warranty for OEM technical solution support, Patch & New Software Upgrade, RMA replacement should be provided for this unit from the date of commissioning	Each	360,104.00	360095	360086	360086

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.16.3	Supply, installation, testing & commissioning of router with following specification & features or equivalent as per direction of the Engineer in charge- High-performance multi-core processors; Aggregate Throughput/IMIX Traffics/Concurrent WAN service Throughput: 500 Mbps/ Upgradable 1 Gbps DRAM: Minimum 4 GB upgradable to 16 GB Flash Memory: Minimum 8 GB upgradable to 32 GB Router should have Min. 4 x 1GE SFP based Routing Port with minimum 2 x 1GE SFP ports. Management: 1x console and 1 x Gigabit Ethernet port for device management; Minimum 4 x 1GE Copper based Switching Port. Serial: 1x Auxiliary port; USB: 2x USB2.0 Type A port; Should support Layer 7 context-aware / application aware Firewall features; Gigabit Ethernet, TI/EI, Channelized EI/TI; IPv4, IPv6, static routes, Routing Information Protocol Versions 1 and 2 (RIP and RIPv2), Open Shortest Path First (OSPF), Border Gateway Protocol (BGP), BGP Router Reflector, Intermediate System-to-Intermediate System (IS-IS), Multicast Internet Group Management Protocol Version 3 (IGMPv3), Protocol Independent Multicast sparse mode (PIM SM), PIM Source Specific Multicast (SSM), Distance Vector Multicast Routing Protocol (DVMRP), IPv4-to-IPv6 Multicast, MPLS, Layer 2 and Layer 3 VPN, IPsec, Layer 2 Tunneling Protocol Version 3 (L2TPv3), Bidirectional Forwarding Detection (BFD), IEEE802.1ag, and IEEE 802.3ah; Generic routing encapsulation (GRE), Ethernet, 802.1q VLAN, Point-to-Point Protocol, Multilink Point-to-Point Protocol, High-Level Data Link Control (HDLC), Serial (RS-232, RS-449, V.35) and PPP over Ethernet: QoS, Class-Based Weighted Fair Queuing, Weighted Random Early Detection, Hierarchical QoS, Policy-Based Routing, Performance Routing and network-based application detection mechanism;					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.17	Minimum 3 Network Interface Module Slots; Support On-Line Insertion (OLR) for Network Interfaces Modules to reduce downtime during fault/repair/upgrade; Modular OS on open platform; The Router should have Redundant Power Supplies from day 1. Should have SNMP, RMON, Syslog, NTP, DNS; Telnet and SSH; Support application performance monitoring; Network Flow Statistic. Service Level assurance feature. Warranty: Minimum 3 (Three) years warranty for OEM technical solution support, Patch & New Software Upgrade, RMA replacement should be provided for this unit from the date of commissioning. <u>Core Switch</u> Supply, installation, testing & commissioning of Core Switch with following specification & features or equivalent as per direction of the Engineer in charge- Should be highly performed fixed switch with wire rate Layer 2 and Layer 3 throughput on all the ports on the chassis. Should have minimum of 24x 10G transceiver-based ports Switch should support modular uplink slot to support 8x10Gig ports or 2x40Gig ports	Each	1,185,631.00	1,153,616.00	1,153,607.00	1,153,607.00

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.18.1	Dual redundant platinum rate power supply and redundant Fans. Switch should support stacking / virtual chassis feature Minimum Switching capacity 475 Gbps or more Minimum Forwarding Throughput 350 Mpps or more Layer 2 switch ports and VLAN trunks IEEE 802.1Q VLAN encapsulation Support for up to 4000 VLANs Minimum 60,000 MAC Address . Support minimum 9198 bytes Jumbo frame Minimum 16 GB DRAM & Flash Switch should support Ethernet standards like IEEE802.1p, IEEE802.1Q, Flow control, Jumbo frame, 802.1D, 802.1w, 802.1s, Jumbo frames, 802.3ad, private vlan . Switch Should have Layer 2, Routed Access (RIP, OSPF – Upto 2000 routes), PBR, PIM Stub Multicast (upto 32000 routes)), PVLAN, VRRP, PBR, CDP, QoS, FHS, 802.1x, Macsec-128, CoPP, SXP, IP SLA Responder, SSO Must have 30 MB of shared buffer for traffic/packet Queuing and processing Switch should have routed access like BGPv4, OSPF (v2, v3), ISISv4, RIP, Static, ECMP, LISP, VXLAN, PIM, SSM, DVMRP, BFD, VRF aware BFD Switch should support VRRP/HSRP Minimum Up to 60,000 indirect IPv4 route and 80,000 IPv4 host IPv4 route Minimum Up to 30,000 indirect IPv6 route and 40,000 IPv6 host IPv6 route Support minimum 4000 L3 VLAN Interfaces or Switched Virtual Interfaces Minimum 510,000 flow entries for security and traffic visibility. Support Dual-stack for IPv4/IPv6 for IPv4-to-IPv6 migration, RFC 7252 (CoAP), VRF, MPLS, Policy based routing ,8 queues per port, IPv4 and IPv6 QoS classification . Switch should have Encrypted Traffic Analytics (ETA) & Policy-based Automation & Assurance for Wired & Wireless features . Minimum 3 (Three) years warranty for OEM technical solution support, Patch & New Software Upgrade, RMA replacement should be provided for this unit from the date of commissioning and services free of cost.	Each	1,602,319.00	1602286	1602277	1602277
17.18.1	<u>Distribution Switch</u>					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installation, testing & commissioning of Distribution Switch of following specifications & features or equivalent as per direction of the Engineer in charge- The switch should have minimum 24 x 10/100/1000 Ethernet and 8 x 10 Gigabit Ethernet SFP uplink ports. Minimum 8GB DRAM & 16GB Flash Dual redundant platinum rate power supply and redundant Fans. Switch should support stacking feature Minimum Stacking Bandwidth 475 Gbps or more . Minimum Switching Capacity 205 Gbps or more Minimum Forwarding Throughput 150 Mpps or more Layer 2 switch ports and VLAN trunks IEEE 802.1Q VLAN encapsulation Support for up to 4,000 VLANs ID Minimum 32,000 MAC Address Minimum 9198 bytes Jumbo frame Switch should have Layer 2, Routed Access (RIP, OSPF - 1000 routes), PBR, PIM Stub Multicast (1000 routes), PVLAN, VRRP, PBR, CDP, QoS, FHS, 802.1X, MACsec-128, CoPP, SXP, IP SLA Responder, SSO Must have 15 MB of shared buffer for traffic/packet Queuing and processing The Switch should support routed access such BGP, EIGRP, OSPF, IS-IS, BSR, IP SLA, MSDP, PIM-BIDIR, TrustSec SGT, MPLS, mVPN, VXLAN, VRF Switch should support VRRP/HSRP Minimum Up to 31,000 IPv4 route and 15,000 IPv6 route Support minimum 1000 L3 VLAN Interfaces or Switched Virtual Interfaces. The Switch should support IP Multicast and PIM, PIM Sparse Mode & Source-Specific Multicast for Wired and Wireless Clients, support basic IP Unicast routing protocols (static, RIPv1 & RIPv2), IPv6 & IPv4 Policy Based Routing (PBR) Minimum 64,000 flow entries for security and traffic visibility.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.18.2	Support Internet Group Management Protocol (IGMP), PIM Stub etc., 802.1p Class of Service (CoS) and Differentiated Services Code Point (DSCP) field classification, Shaped Round Robin (SRR) scheduling, Committed Information Rate (CIR), and eight egress queues per port. Support 802.1X, Flexible Authentication, 802.1x Monitor Mode, and RADIUS Change of Authorization Support minimum 5000 ACL entries Support Port-based ACLs, VLAN ACLs Support Port Security, Dynamic ARP Inspection, and IP Source Guard Switch should support Encrypted Traffic Analytics (ETA) feature. Switch Should support Policy-based Automation & Assurance for Wired & Wireless ,OS, Firmware/BIOS & patch authenticity as encrypted images to protect from unauthorized and modified/cracked images. Support OS validation during booting to protect from threats Support SNMP, syslog, NetFlow or SFlow, Data telemetry collection and correlation for performance monitoring, API Driven configuration. Switch should support port mirroring based on Inbound & outbound, mirroring based on ports, VLANs, RSPAN, ERSPAN. The switch must have at least 314,000 hours Mean Time Between Failure (MTBF) for hardware reliability. Minimum 3 (three) years warranty for OEM technical solution support, Patch & New Software Upgrade, RMA replacement should be provided for this unit from the date of commissioning. Supply, installation, testing & commissioning of Distribution Switch of following specifications & features or equivalent as per direction of the Engineer in charge- Technical Specifications: Quality: ISO 9001/9002 for manufacturer, FCC Class A/B for quality assurance Enclosure Type: 1 RU, 19-in. Rack Mountable with Rack Mounting Kit Architecture: The switch should have minimum 24 x 1G Ethernet SFP and 8 x 10 Gigabit Ethernet SFP uplink ports Should support Redundant Power supply	Each	458,928.00	458916	458907	458907

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Switch should have 8 Gb DRAM & 16 Gb Flash memory Switch should support stacking feature Minimum of 205 Gbps switching capacity Forwarding rate :150 Mpps or above Should support at least 9198 byte jumbo frames Support for up to 32000 MAC addresses, Total number of IPv4 routes (ARP plus learned routes) 31000 Switch should support Software Defined Network (SDN) and can be integrated with SDN controller if required in future integrated with SDN controller if required in future Power receptacles : IEC 320-C14 for one switch; United Kingdom AC Type A Power Cable for other three switches. Layer-2 Features: Layer 2 switch ports and VLAN trunks. IEEE 802.1Q VLAN encapsulation The switch should support Voice VLAN to simplify IP telephony installations by keeping voice traffic on a separate VLAN installations by keeping voice traffic on a separate VLAN Support STP, RSTP, EtherChannel/LACP, VLAN Trunking, Q-in-Q/IEEE VLAN Tunneling The switch should support Auto-negotiation on all ports to automatically selects half- or full-duplex transmission mode to optimize bandwidth. Switch Layer 3 Services: Layer 2, Routed Access (RIP, EIGRP Stub, OSPF - 1000 routes), PBR, PIM Stub Multicast (1000 routes), PVLAN, VRRP, QoS, FHS, 802.1X, MACsec-128, CoPP, SXP, IP SLA Responder from Day 1. Ipv6 unicast routing capability (static, RIP, and OSPF protocols) to forward Ipv6 traffic through configured interfaces by adding incense in future Advanced IP unicast routing protocols (OSPF, Interior Gateway Routing Protocol [IGRP], EIGRP, and Border Gateway Protocol Version 4 [BGPv4]) for load balancing and constructing scalable LANs. Support Policy-Based Routing (PBR) by adding license in future					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Management features: Support SNMP, syslog, NetFlow or SFlow, Data telemetry collection and correlation for performance monitoring. Support sampled NetFlow/SFlow, Switched Port Analyzer, Remote SPAN, shared NetFlow/SFlow policy, RSPAN and packet capture tool like Wireshark for troubleshooting and network visibility. Hardware Reliability: The switch must have at least 290,000 hours Mean Time Between Failure (MTBF). Energy Efficient Ethernet: The ports should support reduced power state so that when a port is not being used, it should move into low power utilization state. It should have per-port power sensing facility. Asset Management: The switch should have built-in RFID tag to facilitate asset and inventory management using RFID readers. Warranty: Minimum 3 (Three) years warranty for OEM technical solution support, Patch & New Software Upgrade, RMA replacement should be provided for this unit from the date of commissioning.	Each	1,612,317.00	1612284	1612275	1612275
17.19	<u>ACCESS SWITCH</u>					
17.19.1	Access Switch Type-1(24 ports and 4 x 1G SFP slots) Supply, installation, testing & commissioning of Access Switch (24 ports and 4 x 1G SFP slots) with following specification & features or equivalent as per direction of the Engineer in charge. Technical Specifications: Quality: ISO 9001/9002 for manufacturer, FCC Class A/B for quality assurance Enclosure Type: 1 RU, 19-in. Rack Mountable with Rack Mounting Kit Architecture: Proposed switch should be enterprise grade switch with x86 based CPU architecture					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Switching Performance : The Switch should have 24 x 10/100/1000 Base-T ports and 4 x 1G SFP slots. Minimum Switching bandwidth should be 56 Gbps or more Minimum Forwarding bandwidth 28 Gbps or more and Forwarding rate(64—byte L3 packets) should be 41 Mpps Switch should have 512MB DRAM and 256 MBFlash. The switch should support minimum 16000 MAC Addresses and 4000 VLAN IDs. Switch Layer 2 Services: The switch should support Automatic Negotiation of Trunking Protocol, to help minimize the configuration & errors. The switch should support IEEE 802.1Q VLAN encapsulation Switch should support IPv4 and IPv6The Switch should be able to discover (on both IPv4 & IPv6 Network) the neighboring device giving the details about the platform, IP Address, Link connected through etc., thus helping in troubleshooting connectivity problems. The switch should support Spanning-tree root guard to prevent other edge switches becoming the root bridge. The switch should support Voice VLAN to simplify IP telephony installations by keeping voice traffic on a separate VLAN The switch should support Auto-negotiation on all ports to automatically selects half- or full-duplex transmission mode to optimize bandwidth The switch should support Automatic media-dependent interface crossover (MDIX) to automatically adjusts transmit and receive pairs if an incorrect cable type (crossover or straight-through) is installed. The switch should support Unidirectional Link Detection Protocol (UDLD) and Aggressive UDLD to allow for unidirectional links caused by incorrect fiber-optic wiring or port faults to be detected and disabled on fiber-optic interfaces. Security features : The switch should support IEEE 802.1x providing user authentication, authorization and CoA.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	L3 features: The Switch should support routing protocols such as OSPF, BSR, IS-ISv4, LISP, VXLAN, VRF. The Switch should support HSRP for IPv4 & IPv6. Support SNMP, syslog, NetFlow or SFlow, Data telemetry collection and correlation for performance monitoring. Support sampled NetFlow/SFlow, Switched Port Analyzer, Remote SPAN, shared NetFlow/SFlow policy, RSPAN and packet capture tool like Wireshark for troubleshooting and network visibility. The Switch should support IPv6 Routing capable protocols such as OSPFv3 in hardware. The Switch should support basic IP Unicast routing protocols (static, RIPv1 & RIPv2). The Switch should support IPv6 & IPv4 Policy Based Routing (PBR) The Switch should support Inter-VLAN routing. The Switch should support HSRP for IPv4 & IPv6. Management features: Support SNMP, syslog, NetFlow or SFlow, Data telemetry collection and correlation for performance monitoring. Support sampled NetFlow/SFlow, Switched Port Analyzer, Remote SPAN, shared NetFlow/SFlow policy, RSPAN and packet capture tool like Wireshark for troubleshooting and network visibility. Support Network automation with Open PnP, Containers, Python scripting, NetCONF, RESTCONF using YANG QoS: Switch should support 802.1p Class of Service (CoS) and Differentiated Services Code Point (DSCP) field classification, Shaped Round Robin (SRR) scheduling, Committed Information Rate (CIR), and eight egress queues per port. Warranty : Minimum 3 (Three) years warranty for OEM technical solution support, Patch & New Software Upgrade, RMA replacement should be provided for this unit from the date of commissioning.	Each	76,406.00	76402	76393	76393

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.19.2	Access Switch Type-2 (16 ports POE and 2 x 1G SFP slots) Supply, installation, testing & commissioning of Access Switch (16 ports POE and 2 x 1G SFP slots) under the following specifications & features or equivalent as per direction of the Engineer in charge Technical Specifications: Quality: ISO 9001/9002 for manufacturer, FCC Class A/B for quality assurance Enclosure Type: 1 RU, 19-in. Rack Mountable with Rack Mounting Kit Architecture: Proposed switch should be enterprise grade switch. Switching Performance : The Switch should have 16 x 10/100/1000 Base-T PoE ports and 2 x 1G SFP slots. The switch should support minimum 28Gbps switching capacity and 26 Mbps Forwarding rate. Switch should have minimum 240W for PoE power supply. Switch should have 512MB DRAM and 256 MBFlash. The switch should support 16000 MAC Addresses and 1000 VLAN IDs. Switch Layer 2 Services: The switch should support Automatic Negotiation of Trucking Protocol, to help minimize the configuration & errors. The switch should support IEEE 802.1Q VLAN encapsulation Switch should support IPv4 and IPv6The Switch should be able to discover (on both IPv4 & IPv6 Network) the neighboring device giving the details about the platform, IP Address, Link connected through etc., thus helping in troubleshooting connectivity problems. The switch should support Spanning-tree root guard to prevent other edge switches becoming the root bridge. The switch should support Voice VLAN to simplify IP telephony installations by keeping voice traffic on a separate VLAN The switch should support Auto-negotiation on all ports to automatically selects half- or full-duplex transmission mode to optimize bandwidth					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	The switch should support Automatic media-dependent interface crossover (MDIX) to automatically adjust transmit and receive pairs if an incorrect cable type (crossover or straight-through) is installed. The switch should support Unidirectional Link Detection Protocol (UDLD) and Aggressive UDLD to allow for unidirectional links caused by incorrect fiber-optic wiring or port faults to be detected and disabled on fiber-optic interfaces. Security features : The switch should support IEEE 802.1x providing user authentication, authorization and CoA. L3 features: The Switch should support routing protocols such as OSPF, BSR, IS-ISv4, LISP, VXLAN, VRF. The Switch should support HSRP for IPv4 & IPv6. Support SNMP, syslog, NetFlow or SFlow, Data telemetry collection and correlation for performance monitoring. Support sampled NetFlow/SFlow, Switched Port Analyzer, Remote SPAN, shared NetFlow/SFlow policy, RSPAN and packet capture tool like Wireshark for troubleshooting and network visibility. The Switch should support IPv6 Routing capable protocols such as OSPFv3 in hardware. The Switch should support basic IP Unicast routing protocols (static, RIPv1 & RIPv2). The Switch should support IPv6 & IPv4 Policy Based Routing (PBR) The Switch should support Inter-VLAN routing. The Switch should support HSRP for IPv4 & IPv6. Management features: Support SNMP, syslog, NetFlow or SFlow, Data telemetry collection and correlation for performance monitoring. Support sampled NetFlow/SFlow, Switched Port Analyzer, Remote SPAN, shared NetFlow/SFlow policy, RSPAN and packet capture tool like Wireshark for troubleshooting and network visibility. Support Network automation with Open PnP, Containers, Python scripting, Netc.ONF, RESTCONF using YANG					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Qos: Switch should support 802.1p Class of Service (CoS) and Differentiated Services Code Point (DSCP) field classification, Shaped Round Robin (SRR) scheduling, Committed Information Rate (CIR), and eight egress queues per port. Minimum 3 (Three) years warranty for OEM technical solution support, Patch & New Software Upgrade, RMA replacement should be provided for this unit from the date of commissioning and services are free of cost.	Each	147,879.00	147874	147865	147865
17.19.3	Access Switch Type-3 (24 ports POE and 4 x 1G SFP slots) Supply, installation, testing & commissioning of Access Switch (24 ports POE and 4 x 1G SFP slots) under the following specifications & features or equivalent as per direction of the Engineer in charge Technical Specifications: Quality: ISO 9001/9002 for manufacturer, FCC Class A/B for quality assurance Enclosure Type: 1 RU, 19-in. Rack Mountable with Rack Mounting Kit Architecture: Proposed switch should be enterprise grade switch with x86 based CPU architecture Performance Feature: The Switch should have 24 x 10/100/1000 Base-T PoE ports and 4 x 1G SFP slots Switch should have minimum 370W for PoE power with additional secondary power supply. The switch should be able to deliver PoE power to end devices without waiting for the switch OS to load fully. Switch should support Software Defined Network (SDN) and can be integrated with SDN controller if required in future Switching Performance : The Switch should have 24 ports POE and 4 x 1G SFP slots slots. The switch should support Following 56 Gbps switching capacity and 41.66 Mbps Forwarding rate. Switch should have minimum 2GB RAM and 4 GB Flash.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	The switch should support 16000 MAC Addresses and 4096 VLAN IDs. Switch should have slot/ports (excluding uplinks ports) for minimum 120 Gbps of stacking bandwidth with dedicated stacking ports and cables with minimum 8 switch in stack Switch should be able to support 3000 IPV4 & 1500 IPV6 routing entries from day-1 Switch should support minimum 512 Switched Virtual Interfaces. Switch Layer 2 Services: The switch should support Automatic Negotiation of Trucking Protocol, to help minimize the configuration & errors. The switch should support IEEE 802.1Q VLAN encapsulation Switch should support IPv4 and IPv6The Switch should be able to discover (on both IPv4 & IPv6 Network) the neighboring device giving the details about the platform, IP Address, Link connected through etc., thus helping in troubleshooting connectivity problems. The switch should support Spanning-tree root guard to prevent other edge switches becoming the root bridge. The switch should support Voice VLAN to simplify IP telephony installations by keeping voice traffic on a separate VLAN The switch should support Auto-negotiation on all ports to automatically selects half- or full-duplex transmission mode to optimize bandwidth The switch should support Automatic media-dependent interface crossover (MDIX) to automatically adjusts transmit and receive pairs if an incorrect cable type (crossover or straight-through) is installed. The switch should support Unidirectional Link Detection Protocol (UDLD) and Aggressive UDLD to allow for unidirectional links caused by incorrect fiber-optic wiring or port faults to be detected and disabled on fiber-optic interfaces. Security features : The switch should support IEEE 802.1x providing user authentication, authorization and CoA.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	L3 features: The Switch should support routing protocols such as OSPF, BSR, IS-ISv4, LISP, VXLAN, VRF. The Switch should support HSRP for IPv4 & IPv6. Support SNMP, syslog, NetFlow or SFlow, Data telemetry collection and correlation for performance monitoring. Support sampled NetFlow/SFlow, Switched Port Analyzer, Remote SPAN, shared NetFlow/SFlow policy, RSPAN and packet capture tool like Wireshark for troubleshooting and network visibility. The Switch should support IPv6 Routing capable protocols such as OSPFv3 in hardware. The Switch should support basic IP Unicast routing protocols (static, RIPv1 & RIPv2). The Switch should support IPv6 & IPv4 Policy Based Routing (PBR) The Switch should support Inter-VLAN routing. The Switch should support HSRP for IPv4 & IPv6. Management features: Support SNMP, syslog, NetFlow or SFlow, Data telemetry collection and correlation for performance monitoring. Support sampled NetFlow/SFlow, Switched Port Analyzer, Remote SPAN, shared NetFlow/SFlow policy, RSPAN and packet capture tool like Wireshark for troubleshooting and network visibility. Support Network automation with Open PnP, Containers, Python scripting, NetCONF, RESTCONF using YANG QoS: Switch should support 802.1p Class of Service (CoS) and Differentiated Services Code Point (DSCP) field classification, Shaped Round Robin (SRR) scheduling, Committed Information Rate (CIR), and eight egress queues per port. Minimum 3 (Three) years warranty for OEM technical solution support, Patch & New Software Upgrade, RMA replacement should be provided for this unit from the date of commissioning and services are free of cost.	Each	191,595.00	191588	191580	191580

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.19.4	Access Switch Type-4 (48x 10/100/1000 Ethernet ports, 4x 10G SFP+) Supply, installation, testing & commissioning of Access Switch (48x 10/100/1000 Ethernet ports, 4x 10G SFP+) with following specification & features or equivalent as per direction of the Engineer in charge- Should have minimum 48x 10/100/1000 Ethernet ports, 4x 10G SFP+ uplinks. Must have minimum 512 MB DRAM & 256 MB Flash Minimum Switching bandwidth should be 176 Gbps or more Minimum Forwarding bandwidth 88 Gbps or more and Forwarding rate(64—byte L3 packets) is 77 Mpps Layer 2 switch ports and VLAN trunks IEEE 802.1Q VLAN encapsulation Support for up to 4000 VLANs ID Minimum 16,000 MAC Address Support minimum 10,240 bytes Jumbo Ethernet frame Support STP, RSTP, EtherChannel/LACP, VLAN Trunking, Q-in-Q/IEEE VLAN Tunneling Support 802.1X, Router Advertisement guard, IPv6 snooping, IPv6 ND inspection, IPv6 device tracking Support OS, Firmware/BIOS & patch authenticity as encrypted images to protect from unauthorized and modified/cracked images. Support SNMP, syslog, NetFlow or SFlow, Data telemetry collection and correlation for performance monitoring. The switch must have at least 1,452,000 hours Mean Time Between Failure (MTBF data) for hardware reliability. Minimum 3 (Three) years warranty for OEM technical solution support, Patch & New Software Upgrade, RMA replacement should be provided for this unit from the date of commissioning and services are free of cost.	Each	126,022.00	126017	126008	126008
17.20	Wireless Access Point Controller					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.20.1	Supply, installation, testing & commissioning of wireless access point Controller for 200 AP with following specification & features or equivalent as per direction of the Engineer in charge. Supported Device: Minimum 200 AP Management I/O: "GE Ethernet management port RJ45 console, 9600-8-N-1 USB2.0 for file maintenance Hardware reset button LEDs: Power, SSD" 100V ~ 240V AC/DC power supply" Data Ports: "2 x combo ports; 10/100/1000Mb SFP socket or Copper RJ45" or higher data rate. Certification: CE, 60950-1, CB, CCC, RoHS, REACH, WEEE Number Supported Users: Minimum 5000 Users Devices Networks Ports: Minimum 2 SFP Gigabit combo ports Multi-admin Role based Access control: "Manage admin privileges to monitor and/or set network and device configuration" Help Desk Troubleshooting Tools: "Remote packet capture Initiate interference and noise floor scan for any AP" Single pane of glass: "Single screen wireless view, wireless backhaul, 802.11 access points, Ethernet switches, plus connected wired and wireless clients" Frictionless On-Boarding: "Secure large scale bulk onboarding Zero touch bulk provisioning, firmware updates" Device Inventory: "Inventory device tracking, status, firmware, and reports" Monitor: "Alarms and events management – Critical/Major/Minor Statistics graphs and table display Alarm traffic light display" Managed Services Platform: "Create and manage tenant accounts with customized views and permission. White label MSP brand to tenant accounts"					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Portal Host: Centrally configure and manage hotspot Time, Rate, and Volume limited guest access up to 1,000 client devices. Warranty: Product 3 years Standard warranty	Each	471,462.00	471451	471441	471441
17.20.2	Supply, installation, testing & commissioning of Wireless Controller for 500 AP under the following specifications & features or equivalent as per direction of the Engineer in charge Technical Specifications: Quality: ISO 9001/9002 for manufacturer, FCC Class A/B for quality assurance Enclosure Type: 1 RU, 19-in. Rack Mountable with Rack Mounting Kit Architecture: Should have minimum 2x 10G/Multigigabit fiber Network Essentials. Switch should support stacking feature Should support Software Defined Network (SDN). Power receptacles : IEC 320-C14 for one switch; United Kingdom AC Type A Power Cable for other three switches. Product Specifications: Should Support minimum 500 Access points Should supports up to 5 Gbps throughput Should support Multigigabit Ethernet interface (up to 5 Gigabit Ethernet) Should support 4096 VLANs Should support SDN architecture Device provide centralized security policies Device provide wireless intrusion prevention system (IPS) capabilities Device provide quality of service (QoS) and wireless mobility Device should proactively identify and mitigates signal interference for better performance Device provide real-time and historical information about Radio Frequency interference which affecting network performance					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Controller should support for centralized, distributed, and mesh deployments to be used at different places in the network, offering maximum flexibility for medium-sized campus, enterprise, and branch networks Device should support efficient access point upgrade that optimizes WAN link utilization for downloading access point images Device should support seamless client access in the event of a WAN link failure (local data switching) Device provide quality of service (QoS) and wireless mobility Device should proactively identifies and mitigates signal interference for better performance Device provide real-time and historical information about Radio Frequency interference which affecting network performance Controller should support for centralized, distributed, and mesh deployments to be used at different places in the network, offering maximum flexibility for medium-sized campus, enterprise, and branch networks Device should support efficient access point upgrade that optimizes WAN link utilization for downloading access point images Wireless: IEEE 802.11a, 802.11b, 802.11g, 802.11d, WMM/802.11e, 802.11h, 802.11n, 802.11k, 802.11r, 802.11u, 802.11w, 802.11ac Wave 1 and Wave 2 Support N+1 resiliency deployment mode with high-availability. Have stateful switchover to the standby controller Wired/Switching/ Routing : IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX specification, 1000BASE-T. 1000BASE-SX, 1000-BASE-LH, IEEE 802.1Q VLAN tagging, IEEE 802.1AX Link Aggregation Security Feature: Support Application Visibility and Application Control, deep packet inspection (DPI) capability Support security policies through downloadable ACLs.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Hardware based ACL for line-rate performance Security Standards: Wi-Fi Protected Access (WPA) and IEEE 802.11i (WPA2, RSN) RFC 2104 HMAC: Keyed-Hashing for Message Authentication RFC 2246 TLS Protocol Version 1.0 RFC 2401 Security Architecture for the Internet Protocol RFC 3280 Internet X.509 PKI Certificate and CRL Profile RFC 4347 Datagram Transport Layer Security RFC 5246 TLS Protocol Version 1.2 Encryption : Wired Equivalent Privacy (WEP) RC4 40, 104 and 128 bits (both static and shared keys. Advanced Encryption Standard (AES): Cipher Block Chaining (CBC), Counter with CBC-MAC (CCM), Counter with Cipher Block Chaining Message Authentication Code Protocol (CCMP) Management Interfaces: Web-based: HTTP/HTTPS. Reporting, monitoring, traffic analysis and troubleshooting tools for wireless network. Cisco Prime Infrastructure Command-line interface: Telnet, Secure Shell (SSH) Protocol, serial port Network Management: Simple Network Management Protocol (SNMP) v1, v2c, v3 RFC 854 Telnet RFC 1155 Management Information for TCP/IP-Based Internets RFC 1156 MIB RFC 1157 SNMP RFC 1213 SNMP MIB II RFC 1350 TFTP RFC 1643 Ethernet MIB RFC 2030 SNMP RFC 2616 HTTP					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	RFC 2665 Ethernet-Like Interface Types MIB RFC 2674 Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering, and Virtual Extensions Interfaces and Indicators: 1x Multigigabit Ethernet interface (up to 5 Gigabit Ethernet) + 4x 1 Gigabit Ethernet interfaces (RJ-45) 1x service port: 1 Gigabit Ethernet port (RJ-45) 1x redundancy port: 1 Gigabit Ethernet port (RJ-45) 1x console port: Serial port (RJ-45) 1x console port: Serial port (mini-B USB) Warranty : Minimum 3 (Three) years warranty for OEM technical solution support, Patch & New Software Upgrade, RMA replacement should be provided for this unit from the date of commissioning.	Each	1,193,077.00	1193053	1193043	1193043
17.21	<u>WIRELESS ACCESS POINT</u>					
17.21.1	Supply, installation, testing & commissioning of wireless access point (Indoor) with following specification & features or equivalent as per direction of the Engineer in charge.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Standards: IEEE 802.11a/b/g/n/ac Wave2 IEEE 802.11d/e/h/i/k/r/u/v/w Modulation: BPSK, QPSK, CCK, 16/64/256-QAM Radio modes : DSSS, OFDM MIMO, Streams 2.4GHz : 2x2:2 MU-MIMO 5GHz : 4x4:4 MU-MIMO Antenna Gain 2.4GHz : 3-5.25dBi 5GHz : 4-6dBi Max Data Rate 2.4GHz : 400Mbps 5GHz : 1450 Mbps Transmit Power (conducted total) 2.4GHz :20- 24dBm 5GHz : 20-28dBm Must support 16 WLANs per AP for SSID Wireless Security WPA-TKIP, WPA2-AES, 802.11i WPA-PSK, WPA2-PSK, WPA2-Enterprise 802.1x Authentication with various EAP types (EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-AKA', EAP-FAST Fast Roaming 802.11r, Opportunistic Key Caching, Enhanced Roaming Warranty: Minimum 3 years Standard warranty	Each	49,306.00	47,973.00	47,964.00	47,964.00
17.21.2	Supply, installation, testing & commissioning of wireless access point (Outdoor) with following specification & features or equivalent as per direction of the Engineer in charge.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Standards: IEEE 802.11a/b/g/n/ac Wave2 IEEE 802.11d/e/h/i/k/r/u/v/w Modulation: BPSK, QPSK, CCK, 16/64/256-QAM Radio modes : DSSS, OFDM MIMO, Streams 2.4GHz : 2x2:2 MU-MIMO 5GHz : 4x4:4 MU-MIMO Antenna Gain 2.4GHz : 3-5.25dBi 5GHz :4- 6dBi Max Data Rate 2.4GHz : 400Mbps 5GHz : 1450Mbps Transmit Power (conducted total) 2.4GHz : 20-24dBm 5GHz : 20-28dBm SSIDs 16 Wireless Security WPA-TKIP, WPA2-AES, 802.11i WPA-PSK, WPA2-PSK, WPA2-Enterprise 802.1x Authentication with various EAP types (EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-AKA', EAP-FAST Fast Roaming 802.11r, Opportunistic Key Caching, Enhanced Roaming	Each	101,645.00	98,898.00	98,889.00	98,889.00

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
17.21.3	Supply, installation, testing & commissioning of Embedded Wireless controller on Wireless Access Point of the following specifications & features or equivalent as per direction of the Engineer in charge- Access Points must include radios for 2.4 GHz and 5 GHz with 802.11ax with external Antenna including AP license. Access Point must support OFDMA and MU-MIMO. including standard OEM provided Mounting brackets for mounting on Ceiling or Roof top. Access Point shall support Console port that uses Standard Port (RJ-45) type connection Should have 1x 100, 1000, 2500 Multigigabit Ethernet (RJ-45) – IEEE 802.3bz. Access Point should have USB port and support power injector ,at least 3 dBi Antenna gain on each radios. Access Point should be IOT ready supporting BLE, Zigbee, Thread and other 802.15.4 devices. Must support 4x4 MIMO for both 2.4 and 5 GHz radio. Must Support data rate upto 5 Gbps. Must support minimum of 23dbm of transmit power in both 2.4Ghz and 5Ghz radios and should follow the local regulatory Norms. Must support AP enforce load-balance between 2.4Ghz and 5Ghz band. Must incorporate radio resource management for power, channel and performance optimization . Should have necessary license to run as Wireless controller platform which will Embedded with this AP. This Embedded WLC must have controlling capacity with 20 APs minimum.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Must have -97 dB or better Receiver Sensitivity. Must support Proactive Key Caching and/or other methods for Fast Secure Roaming. Must support Management Frame Protection. Should support locally-significant certificates on the APs using a Public Key Infrastructure (PKI), Hardware-based encrypted user data and management traffic between controller and Access point for better security, serve clients and monitor the RF environment concurrently. Access Point Must continue serving clients when link to controller is down. It should also have option to authenticate user through Radius server directly from Access Point during link unavailability to controller. Must support telnet and/or SSH login to APs directly for troubleshooting flexibility. Must support 802.3af power source when required. 802.11e and WMM Must support QoS and Video Call Admission Control capabilities. Access point should be wifi 6 certifiable. Minimum 3 (Three) years warranty for OEM technical solution support, Patch & New Software Upgrade, RMA replacement should be provided for this unit from the date of commissioning	Each	87,772.00	85,400.00	85,392.00	85,392.00
17.22	<u>SERVER RACK WITH KVM CONSOLE</u>					
17.22.1	Supply, installation of server rack of size 42U with rack-mount keyboard, mouse, LCD monitor, 8-port console (KVM) switch etc.. complete with all required accessories and following features or equivalent as per direction of the Engineer in charge. Brand: Same brand as server.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	* Rack size : 42U * Cooling system : Min. 4 AC cooling fans. * Front door : Perforated removable door with lock. * Rear door : 1 (one) * Ventilation : Superior ventilation. * Post : min.4 nos. of heavy duty feet / wheels. * PDU / power strip: Min. 2 nos. power strip having min. 6 outlets each (16 Amp.) - Console features : * Display system : Min.17 inch. integrated console LCD monitor of same brand. KVM features: * Ports : Min. 8 ports (with expandability feature) * Cable : 8 KVM to server connecting cables. * Input : Console keyboard with pointing device (mouse / pad). * Form factor : 1U, rack-mount with mounting kits. * Interface adapters: PS/2, USB, VT100. * Power: power w / cooling fan. * 3 years warranty.	Each	252,472.00	245,650.00	245,634.00	245,634.00
17.22.2	<u>Network Rack 32U</u> Supply, installation of Network Rack of size 32U with following features or equivalent as per direction of the Engineer in charge.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Dimension: 1000 mm x 600 mm x 32U (D X W X H) Front Door: Tempered Glass side with Advanced Swivel Lock Rear Door: Hex-vented hole perforated rear door to improve cooling efficiency with Lockable and removable options. Side Panels: Solid side panels with security key locks and quick release slide latches Bottom Plate: Heavy duty bottom plate with strengthen RIB with 150 Kgs loading capacity Anti-Dust Cable Entry: Convenient cable brush panel on top and bottom for both cable entry and anti-dust. Cooling Fan: Pre-installed 4pcs FAN with UK Power Cord on Top	Each	90,169.00	87,729.00	87,713.00	87,713.00
17.22.3	<u>Network Rack 22U</u> Supply, installation of Network Rack of size 22U with following features or equivalent as per direction of the Engineer in charge. Dimension: 800 mm x 600 mm x 22U (D X W X H) Front Door: Tempered Glass side with Advanced Swivel Lock Rear Door: Hex-vented hole perforated rear door to improve cooling efficiency with Lockable and removable options. Side Panels: Solid side panels with security key locks and quick release slide latches Bottom Plate: Heavy duty bottom plate with strengthen RIB with 150 Kgs loading capacity Anti-Dust Cable Entry: Convenient cable brush panel on top and bottom for both cable entry and anti-dust. Cooling Fan: Pre-installed 4pcs FAN with UK Power Cord on Top	Each	57,903.00	57897	57881	57881
17.22.4	<u>Network Rack 15U</u> Supply, installation of Network Rack of size 15U with following features or equivalent as per direction of the Engineer in charge.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Front Door: Tempered Glass side with Advanced Swivel Lock Side Panels: Solid Side Panel with Side Lock Anti-Dust Cable Entry: Convenient Cable brush panel for both cable entry and anti dust Cooling Fan: Preinstalled 2pcs FAN with UK Power Cord on Top Loading Capacity: Welded Frame Structure ensure over 60KG loading capacity. Adjustable front and rear vertical rails	Each	29,983.00	29977	29960	29960
17.23	<u>IDF with fiber & GE patch panel</u> Supply, installation, testing & commissioning of IDF with fiber & GE patch panel with following specification as per direction of the Engineer in charge. Specification: Industry-made brand floor mount IDF (Intermediate Distribution Facility) of minimum 18U size with fiber patch panel (6 port rack mount loaded with SC adapters) and GE Patch Panel (24Port category-6 standard) of appropriate type & size (accommodating access switch, UPS, patch cord of appropriate type & size etc..) including power strip, wire manager, necessary cable ties etc.. complete with all required accessories.	Each	25,247.00	25247	25244	25244
17.24	<u>FACE PLATE (Cat-6 UTP)</u> Supply, installation, testing & commissioning face plate (Cat-6 UTP) with following specification as per direction of the Engineer in charge. Specification : Face plate with MK box (plastic type), dual module with cover and all required accessories.	Each	593.00	593	590	590
17.25	<u>PATCH CORD (Cat-6 UTP)</u>					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installation of patch cord (Cat-6 UTP) with following specification as per direction of the Engineer in charge. Specification : Industry-made brand 3 meters patch cord of Cat-6 UTP cable with RJ-45 connectors at both ends and all required accessories.	Each	403.00	403	401	401
17.26	<u>UTP Cat-6 CABLE</u> Supply, installation, testing & commissioning of UTP (unshielded twisted pair) Cat-6 cable with following specification or equivalent as per direction of the Engineer in charge. Physical specifications : Weight : 25.6 lbs. /1,000 ft. (38.2 kg/km) Jacket thickness : 0.022 in (0.56 mm) Outside diameter : 0.232 in (5.89 mm) Maximum pulling tension : 25 lbs. (11.34 kg) Operating temperature : - 4°F to 140°F (-20°C to 60°C) Gauge : 23 AWG Electrical specifications : NVP (fastest pair @ 10 MHz) : 69% Maximum DC resistance : 7.61 ohms / 100 m Maximum DC resistance unbalance : 3% Mutual capacitance at 1 kHz : 5.6 nF/100 m ANSI/TIA-568-C.2 category 6. ISO/IEC 11 801 : 2002 (edition 2) class E CENELEC EN50173 : 2002 (edition 2) category 6 ETL : CMR	Meter	82.00	82	79	79
17.27	<u>FIBER OPTIC CABLE</u>					
17.27.1	Supply, installation, testing & commissioning of fiber optic cable (Indoor) with following specification or equivalent as per direction of the Engineer in charge.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Specification: Armored single loose tube fiber optic cable (50 / 125 μm multi-mode, 6-core) suitable for internal & external applications in ducts or intra-building links in campus environments and having outer diameter of app. 6.5 mm and weight app. 35.0 kg / km etc.. complete with all required accessories.	meter	126.00	126	123	123
17.27.2	Supply, installation, testing & commissioning of 6 core Multimode fiber optic cable (outdoor) with following specification or equivalent as per direction of the Engineer in charge. Specification: General 6 core single mode (OS2), Single Jacket, Corrugated steel tape armor, Gel-free, Stranded Loose tube Fiber cable. Qualification Standards ANSI/ICEA S-87-640, EN 187105, Telcordia GR-20. Compliance ITU-T G.652.D, ITU-T G.657.A1 (bend insensitive) and TIA- 492CAAB (OS2) Construction Materials: a) Jacket Material: PE / MDPE b) Environmental space: Aerial, lashed and buried applications. c) Strength member, central: Di-electric Rod d) Strength member, peripheral: Water swellable tape e) Number of fibers per tube: 6 f) Jacket UV Resistance: UV Stabilized g) Subunit Type: 2.5mm Gel-free buffer tubes h) No. of Ribs: 2 Mechanical Specifications: a) Cable Diameter: Not more than 12.00 mm b) Cable Weight: 100 – 120 kg/km c) Minimum Bend Radius, loaded: 17.5 cm d) Minimum Bend Radius, unloaded: 11.7 cm e) Tensile Load, long term, Max: 800 N or better f) Tensile Load, short term, Max: 2700 N or better g) Vertical Rise: upto 700 mtr h) Operating Temperature: -40 degree Celsius to +70 degree Celsius					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Mechanical Test Specifications: a) Compression: 44 N/mm (as per IEC 60794-1 E3) b) Flex: 35 Cycles (as per IEC 60794-1 E6) c) Impact: 4.41 N-m (as per IEC 60794-1 E4) d) Water Penetration Test Method: 24 h (IEC 60794-1 F5) Optical Specifications: Attenuation, Maximum a) 0.22 dB/km @ 1550 nm b) 0.25 dB/km @ 1490 nm c) 0.31 dB/km @ 1385 nm d) 0.34 dB/km @ 1310 nm Factory Test report Shall be available publicly against unique tracking ID on cable, at OEM website.	meter	340.00	340	338	338
17.28	<u>FIBER OPTIC SC CONNECTOR</u> Supply, installation, testing & commissioning of fiber optic SC (subscriber connector) connector with following specification. Specification : Industry-made brand 1000 base - SX fiber optic connector to be used for 50 / 125mm (6-core) multimode fiber optic cable.	Each	290.00	290	288	288
17.29	<u>PATCH CORD</u> Supply, installation of patch cord (multimode FO) with following specification as per direction of the Engineer in charge. Specification : Industry-made brand SC-LC duplex 3 (three) meters patch cord of multimode fiber optic cable with appropriate FO connectors at both ends and all required accessories.	Each	782.00	782	779	779
17.30	<u>PATCH PANEL (FIBER)</u> Supply, installation, testing & commissioning patch panel (fiber) with following specification as per direction of the Engineer in charge.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Specification : 24 port fiber patch panel, rack mount loaded with SC adapters etc.. complete and all required accessories. (This item shall be installed within the existing IDF containing a 24 port UTP patch panel).	Each	6,331.00	6331	6328	6328
17.31	<u>CAT 6 Patch Panel With Module</u> Supply, installation, testing & commissioning patch panel with module with following specification as per direction of the Engineer in charge. Brand : Any internationally reputed brand. Category 6, 8-position, 8-wire Keystone jack module. No. of Ports: 24 Module Type: Keystone No. of Rack Spaces: 1U Patch Panel Style: flat Identification: Pre-printed numbering on front; pre-molded numbering on front and back; optional write-on Color: Black Depth In (mm): 1.04 (26.5) Height (mm): 1.71 (43.4) Width In (mm): 19.00 (482.6)	Each	34,832.00	34831	34829	34829
17.32	<u>UTP CAT6 I/O Modular</u> Supply, installation, testing & commissioning of UTP CAT6 I/O Modular under the following features Technical Specifications: Standards: TIA / EIA 568-C.2 Category 6, ISO/IEC 11801 Class E Material Type: Copper alloy, High-impact, flame retardant, thermoplastic Conductor Gauge: 22-24 AWG for both solid and stranded. Plug Insertion Life: IEC 60603-7 compliant plug Plug Retention Force :Minimum 133 N Termination Contact Plating : Nickel					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Termination: Insulation-Displacement Contact (IDC) Wiring : T568A T568B Current Rating : Minimum 500 Mohm Insulation Resistance : Minimum 750 times Plug Insertion Life : Minimum 750 times Warranty: Minimum 3 (Three) years warranty from the date of installation.	Each	593.00	593	590	590
17.33	Horizontal Wire Manager, 1U, Single Sided Supply, installation, testing & commissioning of Horizontal Wire Manager, 1U, Single Sided under the following specifications or equivalent Standards: TIA / EIA 568-C.2 Category 6, ISO/IEC 11801 Class E Features: Standard 19" widely used industry standard. Rear cable manager for cable management. Total Port Quantity: 24 Color: Black Material Type: High-impact, flame retardant, thermoplastic, Powder-coated steel Depth: 4.70 inch Diameter Over Dielectric: Maximum 0.046 inch, Minimum 0.030 inch. Height :1.75 inch & Width :19.00 inch Insulation Resistance: minimum 500 MOhm Regulatory Compliance/Certifications : RoHS 2011/65/EU, ISO 9001:2008 Warranty: Minimum 3 (Three) years warranty from the date of installation.	Each	1,602.00	1601	1599	1599
17.34	1G SFP Modules Supply, installation, testing & commissioning of 1G SFP Modules the following specifications or equivalent & features as per direction of the Engineer in charge Technical Specifications:					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Quality: ISO 9001/9002 for manufacturer, FCC Class A/B for quality assurance The device should be able to operate over multi-mode fiber and single mode fiber using a 1260 to 1350 nanometer, near infrared (NIR) light wavelength as per IEEE 802.3z 1000BASE-LX standard. Hot-swappable input/output device that plugs into an SFP port (no need to power down while installing or replacing). Should have Digital optical monitoring (DOM) capability. 10 km on standard Single-Mode Fiber (SMF, G.652). Minimum TX Power = -8.2 dBm. Minimum RX Power = -14.4 dBm.	Each	17,681.00	17680	17678	17678
17.35	<u>BANDWIDTH CONTROLLER</u>					
17.35.1	Supply, installation, testing & commissioning of bandwidth controller with following specification or equivalent as per direction of the Engineer in charge. Specification : 2 Core 1GHz CPU, CPU sower PC MPC8544 network processor, memory SODIMM DDR Slot, 512 MB installed (supports up to 1.5GB), Storage size: 128 MB, boot loader, router BOOT, 1 M bit flash chip data storage, onboard NAND memory chip, Ethernet thirteen 10 / 100 / 1000 Mbits / gigabit, Ethernet with auto-MDI / X, Ethernet includes switch to enable Ethernet by pass in two ports, mini PCI none storage two micro SD slots, serial port one DB9 RS232C asynchronous serial port, extras reset switch, beeper power options IEC C14 standard, connector 110 / 220V fan, dual fan with failover support mounted at case back dimensions 1U.	Each	131,911.00	131906	131897	131897
17.35.2	Supply, installation, testing & commissioning of bandwidth controller with following specification or equivalent as per direction of the Engineer in charge.					

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Item No.	Description of items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Specification : CPU: TLR4-01680CG-10C CPU core count: 16 CPU nominal frequency: 1.2 GHz RouterOS license: 6 Operating System: RouterOS v6 (64bit) Size of RAM: 2 GB Storage size: 512 MB Storage type: NAND Tested ambient temperature: Max ambient temperature 50 degree C @1.2Ghz; 70C @1Ghz CPU core frequency MTBF: Approximately 200'000 hours at 25C Powering PoE in: Passive PoE Number of DC inputs: 2 Ethernet 10/100/1000 Ethernet ports: 12 Peripherals Serial port: RS232 Number of USB ports: 1 USB Power Reset: Yes USB slot type: microUSB type	Each	297,430.00	297422	297413	297413

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Subhead-18
Stage Light Fittings

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
18.1	<u>PROFILE SPOT LIGHT</u>					
18.1.1	Halogen Version					
	Supply and fixing of professional profile spot light (halogen) of the following features of voltage rating : 230 V AC, 50 Hz, manual zooming system, natural convection cooling, housing in extruded aluminum and steel plate body, scratch resistant epoxy powder paint, projector can tilted by +60 / - 45°.					
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.					
	Model & sample to be approved by the Engineer-in-charge.					
18.1.1.1	2000 W (with lamp holder type : 2000 W CP72, socket GY16)	Each	129,010.00	128991	128932	128932
18.1.1.2	1000 W (with lamp holder type: 1000 W CP70, socket GX9.5)	Each	98,744.00	98726	98666	98666
18.1.1.3	650/500 W (with lamp holder type: 650/500 W CP24, socket GX9.5 / GY9.5)	Each	66,586.00	66568	66510	66510
				0	0	0
18.1.2	LED Version			0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supplying of fixing of LED profile spot light of the following features of voltage : 230V AC, 50 Hz, replaceable, CRI: Ra>95, zooming System, DMX control, optical system: double condenser with variable zoom and focus, metal filter frame with safety net included , 4 steel shutter blades / beam shaping shutters, heat sink with low noise (fan max 8 dB) available, life time 50000 hr.			0	0	0
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
18.1.2.1	300 W (Zoom angle : 11°- 27°; Color temperature : 3150 K, 17000 lm)	Each	416,070.00	416046	415987	415987
18.1.2.2	250 W (Zoom angle : 12°- 23°; Light Color RGBW, 8200 lm)	Each	391,697.00	391673	391614	391614
18.1.2.3	200 W (Light Color RGBWAL, Beam Angle 26°)	Each	352,918.00	352896	352836	352836
18.1.2.4	160 W (Zoom angle : 18°- 35°; Color temperature : 3000 K)	Each	285,722.00	285701	285641	285641
				0	0	0
				0	0	0
				0	0	0
18.2	<u>FRESNEL SPOT LIGHT</u>			0	0	0
18.2.1	Halogen Version			0	0	0
	Supplying, fitting and fixing of FR spot light (halogen) of the following features of voltage 230 V AC, 50 Hz, manual zooming system, natural convection cooling, housing in extruded aluminium and steel plate body, scratch resistant epoxy power paint, projector can tilted by +60 / - 45°.			0	0	0

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
18.2.1.1	1000 W (with Fresnel Lens ø 150mm. Manual Zoom from 16° to 53°. Lamp holder type : 1000 W, socket GX9.5 T/19)	Each	66,271.00	66260	66221	66221
18.2.1.2	500 W (with Fresnel lens ø 130mm. Manual Zoom from 16° to 53°. Lamp holder type : 500 W, socket GX9.5 T/25)	Each	61,226.00	61215	61176	61176
18.2.2	LED Version Supplying of FR LED spot of the following features of voltage : 230V AC, 50 Hz. CRI>95, DMX control, channels function selectable, adjustable zoom system, digital display, control connections, neutrik XLR 5P / 3P in & out, power connections, neutrik powercon in & out. heat sink with low noise fan, max 8 dB.			0	0	0
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
18.2.2.1	300 W (3200K/4200K/5600K optional, Control : DMX512, Dimming : linear 0-100% Electronic zoom : 15-50 degree, IP rating : IP20	Each	372,276.00	372259	372220	372220
18.2.2.1.	250 W (3200K, Control : DMX512, CRI RA>95, Beam Angle 25~55 degree, manual adjustable, Sound sensitive; Strobe effect, IP Rating IP20.	Each	338,290.00	338273	338234	338234
				0	0	0

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
18.2.2.3	200 W (Control: DMX12, LCD display, Zoom: 25°- 50°, IP20, Environment Temperatures:-20°C - 40°C)	Each	268,374.00	268359	268320	268320
				0	0	0
18.2.2.4	180 W (3200K, CRI>90. Control:3 DMX channels; LCD display, Zoom 15°-65°. IP20. Operating temperature: -20°C to 40°C.)	Each	230,309.00	230295	230256	230256
				0	0	0
18.2.2.5	160 W (Manual Zoom) (DMX Channels 4, Light Color 3150K, Beam Angle 14°÷71°, Max Noise 0÷8 dB, Zoom Manual, CRI > 95 / TLCI > 90.)	Each	252,913.00	252899	252860	252860
				0	0	0
18.2.2.6	160 W (Motorized Zoom) (RGB+W, CRI>95 and TLCI>90 (adjustable), DMX 512 control, 5 / 9 DMX Channels, selectable, Zoom:15°~60°, Motorized zoom, Digital display.)	Each	309,663.00	309647	309608	309608
				0	0	0
18.3	<u>PC SPOT LIGHT</u> Supplying, fitting and fixing of PC spot light of the following features of voltage 230 VAC, 50 Hz), manual zooming system, natural convection cooling, housing in extruded aluminium and steel plate body, scratch resistant epoxy power paint, projector can tilted by +60 / - 45°. Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH. Model & sample to be approved by the Engineer-in-charge.			0	0	0
				0	0	0
18.3.1	Halogen Version			0	0	0
18.3.1.1	1000 W (with Fresnel Lens ø 150mm. Manual Zoom from 16° to 53°. Lamp holder type : 1000 W, socket GX9.5 T/19)	Each	66,271.00	66260	66221	66221
				0	0	0
18.3.1.2	500 W	Each	61,226.00	61215	61176	61176

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	(with Fresnel lens ø 130mm. Manual Zoom from 16° to 53°. Lamp holder type : 500 W, socket GX9.5 T/25)			0	0	0
				0	0	0
18.4	<u>FLOOD LIGHT</u>			0	0	0
18.4.1	Halogen Version			0	0	0
	Supplying and fixing of flood light with halogen lamp of the following features of voltage 230 VAC, 50 Hz, symmetric reflector of high purity aluminum hang able, electric cable complete with color filter frame etc. complete with all other accessories as per approval and direction of the Engineer.			0	0	0
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
	500 W	Each	18,412.00	18400	18357	18357
				0	0	0
18.4.2	LED Version			0	0	0
	Supply and Fixing of LED flood Light of the following features of voltage: 230 V AC, 50Hz, light source: SMD LED, C.C.T. : 2700K - 5700K, Max Noise 0 dB, CRI > 95 / TLCI > 90.			0	0	0
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified.& Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
18.4.2.1	200 W	Each	334,948.00	334930	334887	334887
18.4.2.2	180 W	Each	241,626.00	241610	241568	241568

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
18.4.2.3	100 W	Each	197,488.00	197473	197430	197430
				0	0	0
18.5	<u>CYCLOROMA LIGHT</u>			0	0	0
18.5.1	Halogen Version			0	0	0
	Supplying and fixing of Cyclorama Light (halogen) having incandescent lamp of the following features of voltage: 230 V AC, 50Hz.					
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
	1000 W	Each	38,590.00	38578	38535	38535
				0	0	0
18.5.2	LED Version			0	0	0
	Supplying and fixing of 200W LED Cyclorama Light with the features of with the features of voltage 230 V AC, 50 Hz. Control DMX-RDM, DMX CH 5/8, Light Color RGBW, Beam angle Asimmetrical, Max Noise 0÷8 Db, Neutrik XLR 5P in & out / Neutrik Powercon in & out, CRI > 95 / TLCI > 90.					
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
18.5.2.1	150 W	Each	217,792.00	217776	217734	217734
18.5.2.2	200 W	Each	286,931.00	286914	286871	286871
18.5.2.3	300 W	Each	467,363.00	467343	467300	467300

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
18.6	<u>PAR</u>			0	0	0
18.6.1	<u>Halogen Version</u>			0	0	0
	Supplying and fixing PAR 64 Classic LUX is a projector for PAR64 lamp (halogen) with the features of with the features of voltage 230 V AC, 50 Hz. With classic shape with long body, in 2 sections, with square filter frame and polish finishing, the projector is fitted with a GX16 lamp socket, with PVC cable 3 X 1.5mm 21m and cable seal, front protection grill with dense grid mesh. The top-quality ceramic bulb socket factures chromed contracts for higher contract efficiency.			0	0	0
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
	PAR 64 CAN (1000 W)	Each	23,835.00	23817	23748	23748
				0	0	0
18.6.2	<u>LED Version</u>			0	0	0
	Supplying of PAR LED with the features of voltage 230 V AC, 50 Hz. RGBWA, DMX, dimmable, CRI ≤90, 9 LED full color 5 in 1, 4203lm, life time 50000hr.			0	0	0
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified.& Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
18.6.2.1	PAR LED (130 W)	Each	74,279.00	74260	74190	74190

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
				0	0	0
18.7	<u>SCANNER LIGHT</u>			0	0	0
	Supply and fixing of scanner light with the features of DMX channels : 7 or 11 DMX, connectors : 3 - pin XLR Pan and tilt : 180° / 90°, colors : 8 + white, split colors, continuous scroll at variable speeds gobos : 7 + open (5 metal + 2 glass), rotating, interchangeable, slot-n-lock, continuous scroll at variable speeds, light source : 1 (white) 60 W (2.3 A), 50,000 hours life expectancy, strobe rate: 0 to 35 Hz PWM, frequency : 1,200 Hz, beam angle : 15°, IL luminance : 9,110 lux @ 2 m, power linking: 5 units @ 120 V; 10 units @ 230V input voltage: 100 to 240 VAC, 50 / 60 Hz (auto - ranging) power and current : 104 W, 1.5 A @ 120 V, 60 Hz 102W, 0.8 A @ 230 V, 50 Hz, gobo size : 23.9mm outside, 20.5 mm image, 1 mm max thickness.			0	0	0
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
18.7.1	118 W	Each	101,645.00	101620	101535	101535
				0	0	0
18.8	<u>LED STROBE LIGHT</u>			0	0	0
	Supplying and fixing of LED strobe light with the features of DMX channel : 3, light source : 192 LED's (UV) 0.25W (20mA), 10,000 hours, input voltage 230 V AC, 50 Hz.			0	0	0
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
18.8.1	100 W	Each	92,060.00	92038	91961	91961
18.8.2	200 W	Each	74,878.00	74856	74780	74780
18.8.3	300W	Each	60,673.00	60651	60574	60574
				0	0	0
18.9	<u>LED MOVING HEAD LIGHT</u>			0	0	0
18.9.1	Spot			0	0	0
	Supply and Fixing of Moving Head Spot Light with the features of Light Source: 1 LEDs (CW) 170 W, (7.4 A), 8847 K, 50,000 hours life expectancyColor Temperature (at full): 8847 KFront lens diameter: 65 mmCRI: 75.2Beam Angle: 14°Field Angle: 15.6°Lumens – Source: 12,000Lumens – Output: 6,700. Pan and Tilt: 540°/250°Pan and Tilt Ranges: 180°, 360°, 540° pan/90°, 180°, 250° tiltColors: 8 + white, split colors, continuous scroll at variable speeds. Focus: MotorizedIris: MotorizedPrism: 3 Facets, motorized, rotatingStrobe Rate: 0 to 22 Hz. Control Protocol: DMX, RDMDMX Channels: 16 or 19. Input Voltage: 100 to 240 VAC, 50/60 Hz (auto-ranging). Power and Current: 303 W, 2.34 A @ 120 V, 60 Hz. IP Rating: IP20, dry location.			0	0	0
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
18.9.1.1	230 W	Each	436,971.00	436939	436854	436854
				0	0	0
18.9.2	Wash			0	0	0

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply and Fixing of Moving Head Wash Light with the features of Light Source: 19 LEDs (quad-color RGBW) 15 W, (1 A), 50,000 hours life expectancyColor Temperature (range): 2800 to 10000 KBeam Angle: 8° to 30°Field Angle: 12° to 49°Zoom Angle: 12° to 49°Lumens – Source: 8,500Lumens – Output: 5,800Illuminance (12°): 8,650 lux @ 5 mIlluminance (49°): 750 lux @ 5 mPWM Frequency: 1,200 Hz. Pan and Tilt: 540°/230°Pan and Tilt Ranges: 180°, 360°, 540° pan/90°, 180°, 230° tiltDimmer: ElectronicShutter/Strobe: ElectronicZoom: MotorizedStrobe Rate: 0 to 20 HzStandalone Color Mixing: Yes,Color Temperature Presets: YesDim Curves: 4Built-in Automated Programs: YesCustomizable Programs: NoRecall Custom Programs: No. Control Protocol: DMXDMX Channels: 15, 17, 22, 33, 54, or 56Modes/Personalities: 8 personalities (15CH, 17CH, 22CH, 33CH, 33CH MS, 54CH, 54CH MS or 56CH). Input Voltage: 100 to 240 VAC, 50/60 Hz (auto-ranging)Power Linking: 4 units @ 120 V; 8 units @ 208 V; 9 units @ 230 VPower and Current: 339 W, 2.95 A @ 120 V, 60 HzPower and Current: 324 W, 1.62 A @ 208 V, 60 HzPower and Current: 324 W, 1.50 A @ 230 V, 50 Hz.			0	0	0
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
18.9.2.1	150 W	Each	298,250.00	298222	298135	298135
18.9.2.2	165 W	Each	304,934.00	304905	304820	304820
18.9.2.3	280 W	Each	310,893.00	310865	310779	310779
18.9.2.4	380 W	Each	169,977.00	169951	169865	169865
				0	0	0
18.9.3	Beam,Spot and Wash			0	0	0
	400 W	Each	344,630.00	344601	344515	344515

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna,Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)	
	Supply of LED Beam, Spot, and Wash Light as Light source: 1 x 400W LED engine Included three features: beam, spot, and wash Beam Angle: 1°/3°/6.5° /10° Spot Angle:Fix Gobo: 9°/18°(with zoom lens) Rotating Gobo: 10°/20°(with zoom lens) Wash Angle: 12°-23° input voltage 230 V AC, 50 Hz. Protocols: DMX512,RDM 1 rotating gobo wheel with 7 gobos plus open, convenient replacement 1 static gobo wheel with 9 gobos plus open 1 color wheel with 7 colors plus white 6-facet prism, rotating in both directions Independent frost effect Outstanding strobe effect with variable speed Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH. Model & sample to be approved by the Engineer-in-charge.				0	0	0
					0	0	0
					0	0	0
					0	0	0
18.10	<u>LASER LIGHT</u> Supplying and fixing of LASER LIGHT with the features of DMX Channels: 2 or 12DMX Connectors: 3-pin XLRLight Source: (moonflower): 2 LEDs (quad-color RGBA) 13 W (4.4 A), 50,000 hours life expectancy (strobe): 12 LEDs (white) 1 W (300 mA), 50,000 hours life expectancy (laser): 532 nm/30 mW (green) laser diode, 650 nm/100 mW (red) laser diode Strobe Rate: 0 to 11 Hz Power Linking: 11 units @ 120 V; 21 units @ 230 V; Input Voltage: 100 to 240 VAC, 50/60 Hz (auto-Ranging). Power and Current: 47 W, 0.7 A @ 120 V, 60 Hz 46 W, 0.4 A @ 230 V 50 Hz				0	0	0

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Product Brand should be European Union/USA/UK/AUSTRALIA standard or equivalent & Suitable for use in tropical country like BANGLADESH. Complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
18.10.1	30 W	Each	103,307.00	103285	103208	103208
18.10.2	47 W	Each	147,743.00	147720	147643	147643
				0	0	0
18.11	LIGHT EFFECT / ANIMATION			0	0	0
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
18.11.1	62 W	Each	95,843.00	95821	95744	95744
18.11.2	90 W	Each	75,604.00	75582	75505	75505
18.12	<u>DIMMER</u>			0	0	0
	Supply and Fixing of Dimmer with the specification of Number of Dimmer Channels, Channel Output Rating 10 Amps, Channel Output Connector Type, 4mm ² screw terminal, Two Power Option, Option that allows each channel to be set to dimming or direct mains power via relay, Channel MCB Breaking Capacity, 6,000 Amps, Channel MCB Type 1-pole MCB or optional 2-pole RCBO, RCD Protection Option (Qty) (2), Power Switching Component, Triac, Inductor Rise Time 200us, Channel Output Mimic LEDs (Qty) (24), Number of Cooling Fans 2, Fan Cooling Control Variable, 50Hz Frequency Auto-Select, 220V 3-phase Current (per phase) 80 Amps, Chassis Style Wallmount installation dimmer with hinged front door.			0	0	0

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
18.12.1	24 Channel (wall mounted)	Each	414,586.00	414499	414199	414199
18.12.2	12 Channel (rack mounted)	Each	315,275.00	315189	314889	314889
				0	0	0
18.13	<u>LIGHT CONTROLLER</u>			0	0	0
	Supplying and fixing of x- channel light controller with the features of voltage 230 V AC, 50 Hz. y-channel models, recordable up and down fade times, multiple independent chase speeds.			0	0	0
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0
	Complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
18.13.1	24 Channel max controlled channel, x=24, useable model channel, y= 12/24	Each	266,092.00	265746	264460	264460
				0	0	0
18.13.2	48 Channel max controlled channel, x=48, useable model channel, y= 24/48	Each	343,775.00	343428	342143	342143
				0	0	0
18.13.3	DMX -512	Each	457,400.00	457051	455765	455765

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supplying and fixing of LED DMX Light Controller with the features of DMX512/1990 , 512 CH output with isolated optical. Up to 30 fixtures to be connected with a max 32 channels each. Users can allocate DMX channel to each intelligent fixture dynamically. The X/Y channel of different intelligent Fixtures can be controlled by modulation wheel. Up to 50 SHAPE generators. SHAPE track control is provided to control such effects like circles, lines and shapes etc. 30 Chases up to 100 steps each. Trigger mode selectable: synchrono, Auto, Manual speed. 6 chases, 30 scenes operated at the same time. At most 30 intelligent Fixtures can be selected simultaneously. Flash mem-card slot is provided. Each flash me-card can record the whole data of controller. LCD display with backlight. Power supply: AC 90-250 V /50 -60 Hz. Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH. Model & sample to be approved by the Engineer-in-charge.			0	0	0
				0	0	0
				0	0	0
				0	0	0
18.14	<u>SPLITTER</u> Supply and Fixing of DMX SPLITTER with the features of DDMX512/1990 Standard- Four ways DMX distributor with one input and four outputs. Input and output electrically isolated. 3 pin connector. Independent driver, data display for each output. An incorporated DMX switch allows to isolate it from the malfunction caused by the DMX input on the case. DMX input: XLR-D3M. DMX through output XLR-D3F. DMX distribute output connector: XLR-D3FX8. Input voltage: 230 Vac 50 Hz.	Each	65,968.00	65944	65858	65858

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
				0	0	0
18.15	<u>SMOKE MACHINE</u>			0	0	0
18.15.1	Fog Machine (3000 W) Supply of Fog Machine as Input Voltage & Rate: 230 V AC, 50 Hz, Current Limiter Type: Breaker, Current Limiter Specifications: 15A, 250V, Total Power Consumption: 3,000 W, Operating Current: 13.0A Heat Up Time : Appr. 7.0 min, Heater Type : Aluminum Heater Block Fluid Tank Capacity: 1.3 Gal. Max Output Volume: Appr. 30,800 cfm	Each	83,944.00	83931	83887	83887
	Product with required accessories and in conformity to specified codes & specification of International Standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
				0	0	0
18.15.2	Haze Machine (1120-1500 W) Supply of LED Haze / Vertical Fog Machine as Input Voltage : 230 V AC, 50 Hz, Current Limiter Type: Breaker Current Limiter Specifications: 8 A, 250 V, Total Power Consumption: 1,500 W, Operating Current: 6.5 A ,Heat Up Time: Appr. 4.0 min Heater Type: Aluminum Heater Block, LED Color: RGB Max Output Volume: Appr. 32,000 cfm	Each	74,987.00	74975	74932	74932
	Product with required accessories and in conformity to specified codes & specification of International Standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
				0	0	0

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
18.15.3	Bubble Machine (42 W) Supply and fixing of Bubble Machine having input Voltage 230 V AC, 50 Hz, Power and Current : 42W, 0.5A@120V, 60Hz, 0.2 A@230V, 50Hz Product with required accessories and in conformity to specified codes & specification of International Standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH. Model & sample to be approved by the Engineer-in-charge.	Each	120,750.00	120737	120694	120694
				0	0	0
				0	0	0
				0	0	0
				0	0	0
				0	0	0
18.16	<u>LIGHT BATTEN (LOCAL)</u> Supplying , Fabrication and fixing of a light batten to be suspended from ceiling with the following specification: Box frame: made of Aluminum sheet 18 SWG box frame size 16' to 20' long, 5" breadth 2" depth. Supporting horizontal bars made of 1" dia 20' length G.I pipe on top and bottom of the box frame to be linked with box framed by 6" X 1" 3/16" flat iron bar at 4' interval welding finishing etc. complete. Supplying & fixing 13A/15A3-pin socket, with 8 to 10 nos. socket in each frame. Having the light batten with ceiling by 4 nos of 1/2" dia M.S rod with 4 nos M.S hook at bottom of the rod at 6" vertical interval, the rod to be fixed with ceiling by rowel plug and M.S plate with necessary, welding etc. complete i/c enamel painting. LOCAL MADE Model & sample to be approved by the Engineer-in-charge.	Each	41,750.00	41635	41207	41207
				0	0	0
				0	0	0
				0	0	0
				0	0	0
				0	0	0
18.17	<u>HALOGEN SPARE LAMP</u>			0	0	0
18.17.1	Quartz (Pin type) Supplying of Quartz halogen spare lamp (Pin Type Lamp) in conformity to specified codes & specification of international standard.			0	0	0
				0	0	0

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified & Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
18.17.1.1	2000 W	Each	9,433.00	9431	9427	9427
18.17.1.2	1000 W	Each	6,872.00	6870	6866	6866
18.17.1.3	500 W	Each	6,056.00	6054	6050	6050
18.17.2	Tungsten Halogen Lamp			0	0	0
	Supplying of 1000W/500W tungsten halogen spare lamp in conformity to specified codes & specification of international standard.			0	0	0
	Country of origin : EU/G7 Countries or their licensed manufacturing units located globally complete with required accessories and in conformity to specified codes & specification of international standards & CE / UL / CSA certified.& Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.			0	0	0
18.17.2.1	1000 W	Each	1,458.00	1456	1453	1453
18.17.2.2	500 W	Each	1,127.00	1126	1122	1122
18.18	<u>COLOR GELATIN FILTER</u>			0	0	0
	Supplying of Color Gelatin Filter of size 24"x20" of various color in conformity to specified codes & specification of international standard.			0	0	0
	Suitable for use in tropical country like BANGLADESH.			0	0	0
	Model & sample to be approved by the Engineer-in-charge.	Each	1,499.00	1497	1488	1488

Subhead-19

Temporary Electro-Mechanical Works

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.1	GENERATOR					
19.1.1	Temporary installation, testing and commissioning, both ways carrying, loading & unloading dismantling etc. of generator (50 to 300 KVA) including required capacity change over switch (generator to be supplied by department).	Each	12283.97	12062.32	11227.81	11227.81
19.1.2	Maintenance charges per day including consumable materials.	Day	1735.78	1735.78	1735.78	1735.78
19.2	Hire, labour and maintenance charges for temporary supply, installation, testing and commissioning of following capacity generator including required capacity change over switch complete with necessary installation as per direction of Engineer. All materials will be supplied and taken back by the contractor by dismantling the same after completion of the contract period.					
19.2.1	For 20 KVA generator :					
19.2.1.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	6435.73	6319.57	5881.62	5881.62
19.2.1.2	Hire & maintenance charge per day including consumable materials (fuel & lubricants etc.).	Day	2069.58	2069.58	2069.58	2069.58
19.2.2	For 30 KVA generator :					
19.2.2.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	8171.51	8024.64	7469.19	7469.19
19.2.2.2	Hire & maintenance charge per day including consumable materials (fuel & lubricants etc.).	Day	2269.86	2269.86	2269.86	2269.86
19.2.3	For 60 KVA generator:					
19.2.3.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	9480.02	9309.11	8664.20	8664.20

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.2.3.2	Hire & maintenance charge per day including consumable materials (fuel & lubricants etc.).	Day	2803.95	2803.95	2803.95	2803.95
19.2.4	For 100 KVA generator :					
19.2.4.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	12270.62	12050.31	11215.80	11215.80
19.2.4.2	Hire & maintenance charge per day including consumable materials (fuel & lubricants etc.).	Day	3571.70	3571.70	3571.70	3571.70
19.3	TRANSFORMER					
	Hire, labour and maintenance charges for temporary supply installation, testing and commissioning, of distribution transformer (50 to 250 KVA) 3-phase 50Hz. 11KV /415V complete with necessary installation including DESA / DESCO / PDB / REB charge as per direction of Engineer. All materials will be supplied and taken back by the contractor by dismantling the same after completion of the contract period.					
19.3.1	250 KVA transformer.					
19.3.1.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Set	28039.49	27678.99	26317.07	26317.07
19.3.1.2	Hire & maintenance charges per day including consumable materials.	Day	2403.39	2403.39	2403.39	2403.39
19.3.2	200 KVA transformer.					
19.3.2.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Set	28039.49	27678.99	26317.07	26317.07
19.3.2.2	Hire & maintenance charges per day including consumable materials.	Day	2002.82	2002.82	2002.82	2002.82
19.3.3	150 KVA transformer.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.3.3.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Set	25569.35	25252.90	24059.22	24059.22
19.3.3.2	Hire & maintenance charges per day including consumable materials.	Day	2002.82	2002.82	2002.82	2002.82
19.3.4	100 KVA transformer.					
19.3.4.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Set	22965.68	22695.97	21679.87	21679.87
19.3.4.2	Hire & maintenance charges per day including consumable materials.	Day	1335.21	1335.21	1335.21	1335.21
19.3.5	50 KVA transformer.					
19.3.5.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Set	20028.21	19811.91	18994.75	18994.75
19.3.5.2	Hire & maintenance charges per day including consumable materials.	Day	1134.93	1134.93	1134.93	1134.93
19.4	DROP OUT FUSE & LIGHTNING ARRESTER					
	Hire and labour charges of temporary supply & installation of drop out fuse / lightning arrester 11KV, 50Hz including cross arm, insulator, fuse barrels, fuse cutout, holder, LC earthing drop wire, clamps, nut bolts etc. complete as per direction of the Engineer. All materials will be supplied and taken back by the contractor by dismantling the same after completion of the contract period.					
19.4.1	Drop out fuse :					
19.4.1.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Set	2670.43	2622.36	2440.77	2440.77
19.4.1.2	Hire & maintenance charges per day including consumable materials.	Day	57.41	57.41	57.41	57.41
19.4.2	Lightning arrester :					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.4.2.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Set	2670.43	2622.36	2440.77	2440.77
19.4.2.2	Hire & maintenance charges per day including consumable materials.	Day	56.08	56.08	56.08	56.08
19.5	AIR-COOLER Hire & labour charges for temporary supply & installation of window type air cooler of capacity 1.5 ton (18000 BTU / hr.). All materials will be supplied by & taken back by the contractor by dismantling the same after completion of the contract period.					
19.5.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	2403.39	2360.66	2196.43	2196.43
19.5.2	Hire & maintenance Charges per day including consumable materials.	Day	233.66	233.66	233.66	233.66
19.6	PUMP MOTOR Hire and labour charges for temporary supply and installation of 3 -phase, 380- 415 volt, 50 Hz, AC. centrifugal pump motor set for water supply (5 H.P to 30 H.P capacity) on C.C. foundation including supplying of G.I pipes as required for suction and delivery line (up to 10 ft.). All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.6.1	30 H.P pump motor set.					
19.6.1.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	3070.99	3016.25	2806.62	2806.62
19.6.1.2	Hire & maintenance charge per day including consumable materials.	Day	347.16	347.16	347.16	347.16
19.6.2	25 H.P pump motor set.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.6.2.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	2670.43	2622.36	2440.77	2440.77
19.6.2.2	Hire & maintenance charge per day including consumable materials.	Day	320.45	320.45	320.45	320.45
19.6.3	20 H.P pump motor set.					
19.6.3.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	2403.39	2360.66	2196.43	2196.43
19.6.3.2	Hire & maintenance charge per day including consumable materials.	Day	333.80	333.80	333.80	333.80
19.6.4	15 H.P pump motor set.					
19.6.4.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	2269.86	2228.47	2074.92	2074.92
19.6.4.2	Hire & maintenance charge per day including consumable materials.	Day	320.45	320.45	320.45	320.45
19.6.5	10 H.P pump motor set.					
19.6.5.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	1802.54	1770.49	1647.65	1647.65
19.6.5.2	Hire & maintenance charge per day including consumable materials.	Day	267.04	267.04	267.04	267.04
19.6.6	5 H.P pump motor set.					
19.6.6.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	1669.02	1639.64	1526.15	1526.15
19.6.6.2	Hire & maintenance charge per day including consumable materials.	Day	180.25	180.25	180.25	180.25
19.7	SOUND SYSTEM Hire & labour charges for temporary supply & installation of P.A. system containing loudspeaker (four nos), including amplifiers (one no), microphones(two nos), sound column(two nos) etc. & connection wire/accessories with technician's as required as per direction of the Engineer. All materials will be supplied by & taken back by the contractor by dismantling the same after completion of the contract period.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.7.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Job	2670.43	2622.36	2440.77	2440.77
19.7.2	Hire & maintenance charge per day including consumable materials.	Day	333.80	333.80	333.80	333.80
19.8	TEMPORARY WIRING & O.H. LINE					
	Hire and labour charges for temporary surface conduit distribution wiring for light & fan point etc. by providing 2x1.5 sq.mm PVC insulated & sheathed (type BYM) wire with 16 SWG HDBC wire through PVC pipe of 26.49 mm outer dia and minimum wall thickness 1.54mm complete including with 16 gauge M.S. board for switch board concealed system /Tr. switch, ceiling rose etc. complete looping system at the switch board as per direction of the Engineer. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period					
19.8.1	Light point (cable manufacturer's must have valid test certificate from Internationally accredited laboratory like CPRI, KEMA etc.).					
19.8.1.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Point	146.87	144.20	134.86	134.86
19.8.1.2	Hire & maintenance charge per day including consumable materials.	Day	2.54	2.54	2.54	2.54
19.8.2	Fan point (cable manufacturer's must have valid test certificate from Internationally accredited laboratory like CPRI, KEMA etc.).					
19.8.2.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Point	146.87	144.20	134.86	134.86
19.8.2.2	Hire & maintenance charge per day including consumable materials.	Day	2.80	2.80	2.80	2.80
19.8.3	2 pin 5 Amps socket outlet including necessary wire connection fitted on switch board with control switch (cable manufacturer's must have valid test certificate from Internationally accredited laboratory like CPRI, KEMA etc.).					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.8.3.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Point	10.01	9.35	9.35	9.35
19.8.3.2	Hire & maintenance charge per day including consumable materials.	Day	0.40	0.40	0.40	0.40
19.9	Hire & labour charges for temporary supply & laying of following sizes cable, underground system through required sizes PVC pipe cutting trench & re-filling the trench with earth duly rammed through PVC pipe in concealed system consequent mending good the damages complete with ECC as required etc. as per direction of the Engineer. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.9.1	IC 2 x1.5 sq.mm BYM					
19.9.1.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	18.03	17.36	16.02	16.02
19.9.1.2	Hire & maintenance charges per day including consumable materials.	Day	0.53	0.53	0.53	0.53
19.9.2	IC- 2 x 2.5 sq.mm NYY					
19.9.2.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	23.37	22.70	21.36	21.36
19.9.2.2	Hire & maintenance charges per day including consumable materials.	Day	0.67	0.67	0.67	0.67
19.9.3	IC-2 x 4 sq.mm NYY					
19.9.3.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	26.70	26.70	24.03	24.03
19.9.3.2	Hire & maintenance charges per day including consumable materials.	Day	0.93	0.93	0.93	0.93

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.9.4	IC- 2 x 6 sq.mm NYY					
19.9.4.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	33.38	33.38	30.71	30.71
19.9.4.2	Hire & maintenance charges per day including consumable materials.	Day	1.07	1.07	1.07	1.07
19.9.5	IC 2 x 10 sq.mm / 16 sq.mm NYY					
19.9.5.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	42.73	41.39	38.72	38.72
19.9.5.2	Hire & maintenance charges per day including consumable materials.	Day	1.34	1.34	1.34	1.34
19.9.6	IC 4 x 4 sq.mm. NYY					
19.9.6.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	49.40	48.07	45.40	45.40
19.9.6.2	Hire & maintenance charges per day including consumable materials.	Day	1.34	1.34	1.34	1.34
19.9.7	IC 4 x 6 sq.mm NYY					
19.9.7.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	52.07	50.74	48.07	48.07
19.9.7.2	Hire & maintenance charges per day including consumable materials.	Day	1.34	1.34	1.34	1.34
19.9.8	IC- 4 x 10 sq.mm NYY					
19.9.8.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	57.41	56.08	52.07	52.07
19.9.8.2	Hire & maintenance charges per day including consumable materials.	Day	1.87	1.87	1.87	1.87
19.9.9	IC 4 x 16 sq.mm NYY					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.9.9.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	104.15	102.81	94.80	94.80
19.9.9.2	Hire & maintenance charges per day including consumable materials.	Day	1.87	1.87	1.87	1.87
19.9.10	IC- 4 x 25 sq.mm NYY.					
19.9.10.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	106.82	105.48	97.47	97.47
19.9.10.2	Hire & maintenance charges per day including consumable materials.	Day	2.40	2.40	2.40	2.40
19.9.11	IC- 4 x 35/50 sq.mm NYY					
19.9.11.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	122.84	120.17	112.16	112.16
19.9.11.2	Hire & maintenance charges per day including consumable materials.	Day	4.67	4.67	4.67	4.67
19.9.12	IC-4 x 70 sq.mm NYY					
19.9.12.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	153.55	150.88	140.20	140.20
19.9.12.2	Hire & maintenance charges per day including consumable materials.	Day	6.41	6.41	6.41	6.41
19.9.13	IC-4 x 95 / 120 sq.mm NYY					
19.9.13.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	373.86	367.18	341.81	341.81
19.9.13.2	Hire & maintenance charges per day including consumable materials.	Day	15.35	15.35	15.35	15.35

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.10	Hire & labour charges for temporary supply & laying of PVC insulated & sheathed Armored cable rated voltage 600 / 1000V continuous permissible voltage 720 / 1200V type NYFGbY by cutting earth with sand bedding with back filling the earth and mending good the damages as per direction of the Engineer. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.10.1	4 x 185 / 170 sq.mm cable NYFGbY .					
19.10.1.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	440.62	432.61	403.23	403.23
19.10.1.2	Hire & maintenance charges per day including consumable materials.	Day	25.37	25.37	25.37	25.37
19.10.2	4x120 / 150 sq.mm cable NYFGbY .					
19.10.2.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	427.27	419.26	389.88	389.88
19.10.2.2	Hire & maintenance charges per day including consumable materials.	Day	18.69	18.69	18.69	18.69
19.10.3	4x95 sq.mm cable NYFGbY.					
19.10.3.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	240.34	236.33	220.31	220.31
19.10.3.2	Hire & maintenance charges per day including consumable materials.	Day	12.02	12.02	12.02	12.02
19.10.4	4 x 50 / 70 sq.mm NYFGbY .					
19.10.4.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	173.58	170.91	158.89	158.89
19.10.4.2	Hire & maintenance charges per day including consumable materials.	Day	8.01	8.01	8.01	8.01

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.11	Hire and labour charges for temporary supply & laying of 3x70sq.mm / 95sq.mm NYSEYFG by H.T cable by cutting earth complete with back filling the earth & mending good the damages as per direction of the Engineer. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.11.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	320.45	315.11	292.41	292.41
19.11.2	Hire & maintenance charges per day including consumable materials.	Day	18.69	18.69	18.69	18.69
19.12	POLE Hire & maintenance charges for temporary supply & erection of the 25' & 30' long steel pole up to depth of 5' G.L. to fix sleek light fitting for security as per direction of the Engineer. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.12.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	1041.47	1022.77	952.01	952.01
19.12.2	Hire & maintenance charges per day including consumable materials.	Day	20.03	20.03	20.03	20.03
19.13	Hire & labour charges of temporary supply & installation of 5.0" long 1.5" dia G.I. pipe bracket to fix sleek light fittings comp. with 2-pairs 2"x1.5" dia flat bar clamp of 4" dia nuts bolts complete set as required engineer - in - charge. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.13.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	106.82	105.48	97.47	97.47

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.13.2	Hire & maintenance charges per day including consumable materials.	Day	2.27	2.27	2.27	2.27
19.14	Hire & labour charges for temporary supply & erection of borrak bamboo post of 20'/25' long of approx. 2/1.5' below the G.L. complete with digging pit and re-filling the same including ramming earth as per direction of the Engineer. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.14.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	44.06	42.73	40.06	40.06
19.14.2	Hire & maintenance charges per day including consumable materials.	Day	2.00	2.00	2.00	2.00
19.15	FAN					
	Hire & labour charges for temporary supply & fixing 56" A.C. ceiling fan complete. with blade, regulator, down rod, canopy, split pin, nuts, bolts etc. including wiring with 2 x 1.5 sq. mm wire as required including replacement of damaged / unserviceable capacitor, bearing & regulator etc. as required during the contract period. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.15.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	200.28	196.28	182.92	182.92
19.15.2	Hire & maintenance charges per day including consumable materials.	Day	21.36	21.36	21.36	21.36

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.16	Hire & labour charges for temporary providing & fixing 18" dia pedestal fan including required materials. All materials will be supplied by the contractor & taken back by the contractor by dismantling after completion the contract period.					
19.16.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	240.34	236.33	220.31	220.31
19.16.2	Hire & maintenance charges per day including consumable materials.	Day	20.03	20.03	20.03	20.03
19.17	Hire & labour charges for temporary supply & fixing 16" / 18" size exhaust fan complete with blade, wall cover etc. providing erecting steel frame labour shutter etc. complete as required. All materials will be supplied & taken back by the contractor by dismantling the same after completion the contract period.					
19.17.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	200.28	196.28	182.92	182.92
19.17.2	Hire & maintenance charges per day including consumable materials.	Day	13.35	13.35	13.35	13.35
19.18	BUS - BAR					
	Hire & labour charges for temporary supply & fixing on a prepared board of the following size and rating of 500V, grade 3 (three) phase bus bar chamber assembled in 16 gauge metal board including providing bus bar of following length of electrolytic copper flat bar (copper strips four nos.) making provision of cable / wire connection arrangement including hinged type top cover etc. All materials will be supplied by the contractor and to be taken back after the completion of the contract period.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	30 amps/ 60 amps. 3-phase bus bar chamber size 360 mm x 457 mm x 152 mm (14" x 18" x 6") bus bar minimum 45 mm cross section area minimum length 343 mm (13.5") including 30 amps / 60 amps TPMCCB for control.					
19.18.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	33.38	33.38	30.71	30.71
19.18.2	Hire & maintenance charges per day including consumable materials.	Day	10.68	10.68	10.68	10.68
19.19	Hire & labour charges for temporary supply & fixing SDB 250V. 50Hz. grade made of 16 gauge steel with hinge type locking arrangement stove enameled / grey painted having one door built in type 40A capacity bus bar with required no of holes there on fixing on insulators at both end including supply & fixing copper blocks for neutral and earth terminals complete with supply & fixing 250V, 50Hz grade SPMCB with thermal over current and instantaneous, electromagnetic short circuit release (made in USA / UK / GERMANY / SWITZERLAND / ITALY / JAPAN / FRANCE or Equivalent accepted / approved by the engineer) with necessary arrangement for fixing of MCB's in such a manner that the knobs of the MCB's come out of the top cover of the board with following particulars :- 8-way SDB comprising of 8 nos (supplying & fixing) MCB each of capacity 5 / 10A for Circuits with one no 30A SPMCB for main control (box size :- 8"x 8"x 16"). All materials will be supplied by the contractor & taken back by the contractor by dismantling the same after completion of the contracted period.					
19.19.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	182.92	180.25	166.90	166.90
19.19.2	Hire & maintenance charges per day including consumable materials.	Day	16.02	16.02	16.02	16.02

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.20	DISTRIBUTION BOARD					
	Hire & labour charges for temporary supply & fixing of panel board consisting of the following.					
19.20.1	MDB : In-coming : 1 no. 160A TPMCCB. 1 no. 200A bus bar. Out-going : 2 nos. 30A TPMCCB. 1 no. 60A SPMCB. 2 nos. 30A SPMCB. 1 no. 60A TPMCCB. All materials will be supplied by the contractor & taken back by the contractor by dismantling the same after completion of the contract period.					
19.20.1.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	2002.82	1966.77	1830.58	1830.58
19.20.1.2	Hire & maintenance charges per day including consumable materials.	Day	213.63	213.63	213.63	213.63
19.20.2	Hire & labour charges for temporary supply and fixing of panel board consisting of the following: MDB : In-coming : 1 no. 160A TPMCCB. 1 no. 200A bus bar. Out-going : 4 nos. 30A TPMCCB.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	3 nos. 15A SPMCB. 2 nos. 10A SPMCB. All materials will be supplied by the contractor & taken back by the contractor by dismantling the same after completion of the contract period.					
19.20.2.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	2002.82	1966.77	1830.58	1830.58
19.20.2.2	Hire & maintenance charges per day including consumable materials.	Day	57.41	57.41	57.41	57.41
19.21	Hire & labour charges for temporary supply & installation 40' long 38mm (1.5") dia G.I pipe, earth electrode securely to be bonded by of No. 2 SWG HDDB wire with crocodile clamp, nuts, bolts etc. complete as required to achieve earth resistance of at least 2 ohms in driest season. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.21.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	3271.27	3212.52	2989.54	2989.54
19.21.2	Hire & maintenance charges per day including consumable materials.	Day	28.04	28.04	28.04	28.04
19.22	Hire & labour charges for supply & installation of 200A. 415V. 50Hz. capacity change over switch with required size cable socket etc. complete as per direction of the Engineer including dismantling. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.22.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	480.68	472.67	439.29	439.29

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.22.2	Hire & maintenance charges per day including consumable materials.	Day	22.03	22.03	22.03	22.03
19.23	Hire & labour charge for temporary supply & installation 3- phase, SDB with TPMCCB, SPMCB, bus bar control with necessary wiring. In-coming :- 1 no. 60A TPMCCB. 1 no. 100A bus bar. Out-going :- 4 nos. 30A SPMCB. 3 nos. 15A SPMCB. 2 nos. 10A SPMCB. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.23.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	165.57	162.90	150.88	150.88
19.23.2	Hire & maintenance charges per day including consumable materials.	Day	26.70	26.70	26.70	26.70
19.24	Hire & labour charges for temporary supply & fixing of 6- way 60A FDB for proper distribution including dismantling. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.24.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	213.63	209.63	194.94	194.94
19.24.2	Hire & maintenance charges per day including consumable materials.	Day	14.69	14.69	14.69	14.69

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.25	Hire & labour charges for temporary supply & fixing of 3 / 4 / 6- way BDB including required nos. cutout (5 / 10 A) to be fixed on 10"x12" size wooden board (double) with proper connection and maintenance as per direction of the engineer-in-charge. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.25.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	66.76	65.43	61.42	61.42
19.25.2	Hire & maintenance charges per day including consumable materials.	Day	5.01	5.01	5.01	5.01
19.26	Hire & labour charges for temporary supply & fixing of main distribution board including required TPMCCB & TP bus bar following rating including required size almirah type box complete as per direction of the Engineer. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period. In-coming :- 1 no. 315A TPMCCB. 1 no. 400A bus bar. Out-going :- 2 nos. 150 / 200A TPMCCB.					
19.26.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	7343.68	7211.49	6712.12	6712.12
19.26.2	Hire & maintenance charges per day including consumable materials.	Day	600.85	600.85	600.85	600.85
19.27	Hire & labour charges for temporary supply & installation of sub-distribution panel board of consisting the following:- In-coming :-					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	1 no. 200A.TPMCCB. 1 no. 300A.TP bus bar Out-going:- 1 no. 30A TPMCCB. 3 nos. 60A SPMCB. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.27.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	3738.60	3671.84	3416.81	3416.81
19.27.2	Hire & maintenance charges per day including consumable materials.	Day	240.34	240.34	240.34	240.34
19.28	Hire and labour charges for temporary supply & fixing sub- distribution panel board of consisting the following: In-coming :- 1 no. 160A TPMCCB. 1 no. 200A TP bus bar Out-going :- 3 nos. 63A SPMCB. 3 nos 60A TPMCCB. 1 no. 30A TPMCB. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.28.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	2937.47	2884.06	2685.12	2685.12
19.28.2	Hire & maintenance charges per day including consumable materials.	Day	226.99	226.99	226.99	226.99
19.29	CABLE SOCKET & JOINTING					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply & fixing cable socket (of different size for 120mm/ 95mm/ 70mm / 50mm / 35mm cable) fixing by punch machine, proper soldering & necessary tapping etc. as required.	Each	102.81	101.48	93.46	93.46
19.30	Jointing the 35 sq. mm / 50 sq. mm 4- core cable with necessary. cable socket, jointing by punch machine / tapping etc., in proper manner.					
19.30.1	Temporary installation, both ways carrying loading & unloading dismantling etc. charge.	Job	1068.17	1049.48	976.04	976.04
19.31	LIGHT FITTINGS					
	Hire & labour charges for temporary supply & fixing of 1 x 4'- 40 watt fluorescent tube light fitting complete with cover, superior quality ballast, starter, holder, 16 gauge sheet steel rust proof stove enameled base, wall /ceiling mounted including wiring with 2 x 1.5 sq. mm PVC insulated & sheathed wire complete as required. Manufactured by GLORIA (art no. GTF-755 x 1 x 40 watt design) or CRESCENT (cat no. CTLS- 11 x 1 x 40 watt design) or SHWASH (cat No. SCTF- 34 x 1 x 40 watt design) complete with fluorescent tube light including replacement of fuse / unserviceable tube light, choke, starter, holder etc. as required. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.31.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	89.46	88.12	81.45	81.45
19.31.2	Hire & maintenance charges per day including consumable materials.	Day	10.68	10.68	10.68	10.68

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.32	Hire & labour charges for temporary supply & fixing 2 x 4'- 40 watt fluorescent tube light fitting manufactured by GLORIA cat no- 756 x 2 x 40 watt design or similar product of SHWASH / CRESCENT including replacement of fuse / unserviceable 4'- 40 watt tube light, ballast, starter, etc. as required. All materials will be supplied by the contractor & taken back by the contractor by dismantling the same after completion of the contract period.					
19.32.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	110.82	109.49	101.48	101.48
19.32.2	Hire & maintenance charges per day including consumable materials.	Day	12.02	12.02	12.02	12.02
19.33	Hire & labour charges for temporary Supply & fixing pendent light fitting with 13mm dia oxidized chromium plated pipe 457 mm long ceiling brass pendent brass holder, 254 mm (10") dia. glass shade of pumpkin shape, manufactured by CRESCENT cat no. CHPG or similar product of SHWASH / GLORIA with 100-watt lamp including replacement of fused bulb. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period					
19.33.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	46.73	45.40	42.73	42.73
19.33.2	Hire & maintenance charges per day including consumable materials.	Day	1.07	1.07	1.07	1.07
19.34	Hire & labour charges for temporary supply & fixing different color spot light fitting including wiring control switch etc. as required. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.34.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	110.82	109.49	101.48	101.48

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.34.2	Hire & maintenance charges per day including consumable materials.	Day	5.34	5.34	5.34	5.34
19.35	Hire & labour charges for temporary supply & fixing street light (sleek) fitting 2x4'- 40 watt fitted on pole complete. with 2 nos.4'-40 watt choke, starter, holder (2 pairs) including replacing the fused unserviceable materials during the contract period. All materials will be supplied by the contractor & taken back by the contractor by dismantling the same after completion of the contract period.					
19.35.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	200.28	196.28	182.92	182.92
19.35.2	Hire & maintenance charges per day including consumable materials.	Day	10.68	10.68	10.68	10.68
19.36	Hire & labour charges for temporary supply & installation of 1000 watt halogen light fitting on pole with accessories electrical connection, replacement of fused bulb as required. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.36.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	200.28	196.28	182.92	182.92
19.36.2	Hire & maintenance charges per day including consumable materials.	Day	10.68	10.68	10.68	10.68
19.37	Hire & labour charges for temporary supply & fixing of 5 - 150 watt LED light fitting with driver , chips etc. complete as required. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.37.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	200.28	196.28	182.92	182.92
19.37.2	Hire & maintenance charges per day including consumable materials.	Day	93.46	93.46	93.46	93.46

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.38	Hire & labour charges for temporary supply & fixing 15'' / 18'' dia umbrella fitting on G.I pipe as per direction of the engineer-in-charge. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.38.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	220.31	216.30	201.62	201.62
19.38.2	Hire & maintenance charge per day including consumable materials.	Day	10.68	10.68	10.68	10.68
19.39	Hire & labour charges for temporary supply & fixing including fabrication of 456 mm(18'') dia 3.2mm thick plastic sheet made round globe type gate light fitting complete including 2 Nos. of 100 watt bulb with supporting bases, nuts, bolts etc. as per direction of Engineer. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.39.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	188.27	184.26	172.24	172.24
19.39.2	Hire & maintenance charges per day including consumable materials.	Day	16.02	16.02	16.02	16.02
19.40	Hire & labour charges for temporary supply, installation of 12'-0" dia 3.2mm thick plastic acrylic sheet as per drawing with supporting with required iron angle frame including fixing of panaplex over the acrylic sheet & 21 nos. of energy saving / LED lamp to be fitted inside the globe arrangement for continuous color changing with regular sequence and arrangement for continuous movement of globe including the replacement of fused energy saving lamps, damaged holders etc. during the contract period. The globe shall be fitted on the top of a tower. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.40..1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	126845.33	124562.11	115936.63	115936.63
19.40.2	Hire & maintenance charges per day including consumable materials.	Day	934.65	934.65	934.65	934.65
19.41	Hire and labour charges for temporary supply installation of 9144mmx1829mmx254mm (6'x3'x10") size 2.1mm thick plastic display board with monogram / name of the function supported with aluminum channel including other materials such as bulb / tubes wires display materials for color display, replacement of fuse bulb / tube light etc. as per required during the contract period. The display board will be fitted in the middle of the tower. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.41.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	13085.10	12850.10	11959.51	11959.51
19.41.2	Hire & maintenance charges per day including consumable materials.	Day	387.21	387.21	387.21	387.21
19.42	Hire & labour charges for supply & fixing 1000 watt flood light fitting including supplying of bulb & other accessories. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.42.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	243.01	239.00	221.65	221.65
19.42.2	Hire & maintenance charges per day including consumable materials.	Day	22.26	22.26	22.26	22.26

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.43	Hire & labour charges for temporary supply & installation water proof 54 x3 watt warm white LED per can light , AC 90 V - 245 V / 50-60 HZ, 180 watt, 15°-45° beam angle (selectable) with accessories electrical connection, Control: DMX512, master-slave, stand-alone, music activate, function: color combination changer of the latest hybrid technology and excellent built-in program, strobe, gradual, pulse, cycle, color selection, music activated, electronic linear dimmer as per direction of the engineer in charge. All materials will be supplied & taken back by contractor by dismantling the same after completion of the contract period.					
19.43.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	542.10	532.75	495.36	495.36
19.43.2	Hire & maintenance charges per day including DMX controller.	Day	66.76	66.76	66.76	66.76
19.44	TEMPORARY ILLUMINATION					
	Hire & labour charges for temporary illumination in required place with supply of flexible brightness round / flat LED strip warm / white / other color including aluminum profile, electronic driver and controller with other materials such as wires, display materials as per direction of the engineer-in-charge including carrying both way loading & unloading, dismantling etc. with self watch & maintenance material such as lamp / holder etc. during contract period.					
19.44.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Meter	166.90	164.23	152.21	152.21
19.44.2	Hire & maintenance charges per day including consumable materials.	Day	13.35	13.35	13.35	13.35

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.45	Hire & labour charges for temporary supply and installation of LED strip controller having power connection 1500 W as per direction of the engineer-in-charge including carrying both way loading & unloading, dismantling etc. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.45.1	Temporary installation, commissioning, both ways carrying, loading, unloading & dismantling etc. charges.	Each	1602.26	1572.88	1464.73	1464.73
19.45.2	Hire & maintenance charges per day including consumable materials.	Day	106.82	106.82	106.82	106.82
19.46	Hire & labour charges for temporary illumination in required place with supplying of mini lamp / normal LED colored lamp with other materials such as wires, display materials for color timer display with regular sequence as per direction of the engineer-in-charge including carrying both way loading & unloading, dismantling etc. with self watch & maintenance material such as lamp / holder etc. during contract period.					
19.46.1	With mini LED lamps:-					
19.46.1.1	Charges for installation, dismantling, loading & unloading, carrying both ways etc.	Each	0.24	0.00	0.00	0.00
19.46.1.2	Hire & maintenance charges including replacing fuse lamp / consumable materials per day (up to three consecutive days).	Day	0.24	0.24	0.24	0.24
19.46.1.3	For next days (after 3 days) :- Hire & maintenance charges including replacing fuse lamp / consumable materials per day	Day	0.08	0.08	0.08	0.08
N.B. Add 25% for National Assembly Building illumination						
19.46.2	With 15W / 25W / 40W incandescent lamp:-					
19.46.2.1	Charges for installation, dismantling, loading & unloading, carrying both ways etc.	Each	6.41	6.68	5.34	5.34

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.46.2.2	For 3 (three) consecutive days :- Hire & maintenance charges including replacing fuse lamp / consumable materials per day	Day	1.34	1.34	1.34	1.34
19.46.2.3	For next days (after 3 days) :- Hire & maintenance charges including replacing fuse lamp / consumable materials per day	Day	0.67	0.67	0.67	0.67
N.B. Add 25% for National Assembly Building illumination						
19.47	Hire & labour charges for temporary service connection from L.T panel board by electrical control accessories / wires etc. used in temporary Illuminations of garden / roads / trees / fowara etc. including installation and dismantling carrying both way loading & unloading stacking self watch and maintenance as per direction of the engineer - in - charge (for illumination circuits & service connection).					
19.47.1	2x6 mm ² PVC insulated & sheathed cable of 600V 50Hz grade (PWD approved wire).					
19.47.2	Temporary installation. both ways carrying, loading & unloading, dismantling etc. charges.	Meter	12.02	12.02	10.68	10.68
19.47.3	Hire & maintenance charges per day including consumable materials.	Day	0.93	0.93	0.93	0.93
19.48	Hire & labour charge for temporary supply & fixing following capacity DPIC/ TPICNL control switch & prepared board with necessary. wire connection etc. all materials supplied & carrying both way loading, unloading dismantling etc. with self watch & maintenance during the contract period.					
19.48.1	30A to 60A DPIC / DPMCCB					
19.48.1.1	Temporary installation both ways carrying, loading & unloading, dismantling etc. charge.	Each	37.39	36.05	34.72	34.72
19.48.1.2	Hire & maintenance charges per day including consumable materials.	Day	1.00	1.00	1.00	1.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
19.48.2	30A to 100A TPICNL / TPMCCB					
19.48.2.1	Temporary installation both ways carrying, loading & unloading, dismantling etc. charge.	Each	30.04	29.37	28.04	28.04
19.48.2.2	Hire & maintenance charges per day including consumable materials.	Day	3.87	3.87	3.87	3.87
19.49	Hire and labour charge for temporary supply, installation, testing & commissioning of outdoor mobile / moveable LED display solution with floor stranded portable SS / AI frame. Laptop, cable, software and required operational personnel for functioning outdoor LED screen / Video wall's complete solution with necessary installation as per direction of Engineer. All materials will be supplied and taken back by the contractor by dismantling the same after completion of the contract period.					
19.49.1	Outdoor (P5) quality.	Sqm / Day	1578.22	1554.19	1463.39	1463.39
19.49.2	Outdoor (P3) quality.	Sqm / Day	1819.90	1793.19	1693.05	1693.05
19.49.3	Outdoor (P3) quality with appropriate sound equipment	Sqm / Day	2074.92	2045.55	1937.40	1937.40
19.50	75' FEET LONG METALIC TOWER					
	Hire and labour charges for temporary supply and installation of 75' ft long tower made of 3"x3" & 2"x2" MS angle, nut bolts, RCC foundation including G.I. pipes support as required. All materials will be supplied & taken back by the contractor by dismantling the same after completion of the contract period.					
19.50.1	Temporary Installation both way carrying loading & unloading dismantling etc. charge.	Each	46732.49	45891.31	42713.50	42713.50
19.50.2	Hire & maintenance charge per day including consumable materials.	Day	1201.69	1201.69	1201.69	1201.69

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Subhead -20.1
Building Management System

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
20.1.1	BMS Supply, installation, testing and commissioning of Graphics/Web Based Software (with at least 3 user license) complete with enterprise software/ workstation software / BA Management station/ web service/ interface API /graphics software/ Energy management software/ Application/ Engineering tools etc. as declared by the manufacturer to make the system completely functional, enables the user to monitor plant or building service, make changes to the way the building is controlled from a graphical display. Supports minimum 2500 I/O. It enables connection to remote sites over TCP/IP using hostnames, view and manage graphics, alarms, schedules, trend logs, and reports. Compatible to BMS Server. Accepted / Approved by the Engineer-in-charge.	Each	1134989	1134989	1134989	1134989
20.1.2	Supply, installation, testing and commissioning of Automation server/ system controller of the following specifications- supports BACnet/IP or MODBUS RTU & TCP or LonWork or any open source protocol. 3D graphics enabled, Ethernet Port ,USB, RS 485 ports (optional) , Terminal Base, power supply 15~24 Volt DC or as required At least 16 inputs/outputs channel onboard/pre-installed. Expandable up to 300 physical data points (single or multiple units), with 3rd Party integrator (if required). Must be i)BTL Listed ii) CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	216896	216896	216896	216896

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
20.1.3.1	Supply, installation, testing and commissioning of 8 channel (minimum) universal I/O modules compatible to automation server/system controller including terminal base. Ideal for any mix of temperature, pressure, flow, status points, and similar point types in a building control system. Input supply voltage: 21~26 VDC. Operating temperature: 0 to 50°C, Maximum humidity 90 % RH non-condensing. Must be i) BTL Listed ii) CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	50444	50444	50444	50444
20.1.3.2	Supply, installation, testing and commissioning of 16 channel universal input modules (single unit or multiple units) compatible to automation server/system controller including terminal base. Input supply voltage- 21-26 VDC. Operating temperature: 0 to 50 °C, Maximum humidity 90 % RH non-condensing. Must be i) BTL Listed ii) CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	100888	100888	100888	100888
20.1.3.3	Supply, installation, testing and commissioning of 8 channel (single unit or multiple units) Universal output / digital/ analog output modules compatible to automation server/system controller including terminal base. Input supply voltage: 21~26 VDC. Operating temperature :0 to 50 °C , Maximum humidity 90 % RH non-condensing. Must be i) BTL Listed ii) CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	50444	50444	50444	50444

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
20.1.3.4	Supply, installation, testing and commissioning of 16 channel (single unit or multiple units) digital input modules compatible to automation server/system controller including terminal base. Input supply voltage- 21~26 VDC. Operating temperature: 0 to 50 °C ,Maximum humidity 90 % RH non-condensing. Must be i)BTL Listed ii) CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	100888	100888	100888	100888
20.1.4	Supply and installation of two core shielded control cable of Tinned annealed copper with Aluminium Polyester shield, PVC jacket. Voltage withstanding capacity 300 volt at 60°C. 22 AWG. Accepted /approved by the Engineer-in-charge.	Meter	151	151	151	151
20.1.5	Supply & Installation of Ambient humidity/temperature sensors - designed to provide relative humidity measurement and temperature data. Supply voltage 24 V AC or 20-35 V DC Working Temperature range 0to+50°C , 0~95% relative humidity(non-condensing) . IP 65 or above- degree of protection with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/ Approved by the Engineer in Charge.	Each	31527	31527	31527	31527
20.1.6	Supply & Installation of Space/Room temperature sensor for assessing temperatures inside of private homes, offices, etc. Supply voltage 24 V AC or 20-35 V DC Working range 0...+40 C° , 0 to 90 %RH , IP 30 or above- degree of protection (Minimum) with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	25222	25222	25222	25222

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
20.1.7	Supply & Installation of Duct Temperature Sensor with all accessories mounting in air handling systems for monitoring of air ducts . Sensor Length 200 mm~300 mm minimum, stainless steel/copper immersion tube, temperature range 0 to +100 °C , 0 to 90 %RH. IP degree of protection IP65 with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/ Approved by the Engineer in Charge.	Each	4414	4414	4414	4414
20.1.8	Supply & Installation of immersion temperature sensor complete with all accessories mounting in the pipe systems with separate sealed pocket Probe Length 100mm-150 mm, immersion tube: Stainless steel, IP degree of protection IP65. Temperature range 0 to +100°C, 0~95% R.H., with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	10089	10089	10089	10089
20.1.9	Supply & Installation of Differential Pressure Switches with all accessories mounting in air handling systems for monitoring of air ducts, filters and fans. Pressure range : 20-5000 pa , as required for the system, Temperature 0°~60°C , Service life Mechanical > 10 ⁶ switching cycle . Protection class IP54. Max.differential pressure 10 kPa with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	8488	8488	8488	8488

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
20.1.10	Supply & Installation of pressure transmitter suitable for liquids to measure positive, negative pressures and pressure differentials in HVAC systems. Pressure working range 0-1000 Kpa, maximum pressure=2x nominal pressure. Output voltage: 0-10 V, Medium Temperature: 0 to +80°C, IP 65 or above degree of protection, Stainless steel medium with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	50444	50444	50444	50444
20.1.11	Supply & Installation of Modulating Damper Actuator with all accessories mounting in air handling systems to control airflow on ducts. Supply voltage: 24 VAC /230 V AC 50Hz/ 24-48VDC .Modulating 0-10 VDC. Nominal torque 8 Nm or above. Running Time 150 sec. Protection class IP54. Noise level 45dB (A) maximum. Ambient operation temperature 0-50°C, Humidity 95%r.h. with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	23890	23890	23890	23890
20.1.12	Supply and installation of microcontroller based fully programmable VAV controller with damper actuator of minimum 5 Nm. Supply voltage 24 VAC, 50Hz or 24 VDC communication via RS 485, 2-4 input/output modules. Operating temperature 0-50°C, Humidity 90% non-condensing. Accepted/Approved by the Engineer in Charge.	Each	50444	50444	50444	50444
20.1.13	Supplying, installation, testing, commissioning of application specific controller suitable for room control as a standalone field controller. Minimum no. Universal I/O is 8 with at least 2 nos solid state relay output, with display .Ambient temperature, storage 0 to +60 °C Maximum humidity 90 % RH non-condensing. Supply voltage 24 VAC / 24VDC..Protection class IP20 with relevant International standards. Compatible to Building Management System. Accepted/Approved by the Engineer in Charge.	Each	100888	100888	100888	100888

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
20.1.14	Supply, installation, testing , commissioning of CO or CO ₂ sensor as required to detect CO/CO ₂ gas in the air . CO ₂ detect range:0-2000 ppm, CO detect range 0-300 ppm. Accuracy ± 5 %. Rated power supply: 24VAC, 24 VDC. Output voltage: 0-10V DC. Protection class IP54. Operating Temperature 14 to 122°F (0-50°C) Humidity 0-90% non-condensing. Coverage area: 5000-7000 sft.for CO and up to 1000 sft for CO ₂ sensor with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	37833	37833	37833	37833
20.1.15	supply, installation , testing , commissioning of combo sensor to measure CO ₂ , Temperature, Humidity . CO ₂ detect range:0-2000 ppm, Temperature detection range: 0-50°C, Humidity Detection range : 0-100% RH non-condensing Accuracy ± 5 %. Rated power supply:24VAC, 24 VDC. Output voltage : 0-10V DC. Protection class IP30. Operating Temperature 14 to 122°F (0 to 50°C) Humidity 0-90% non-condensing. Coverage area: 1000 sft. with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	54696	54696	54696	54696
20.1.16	Supply, installation , testing , commissioning of PIR motion sensor to detect motion Detection range :6-10m. Detection angle: 360°. Mounting Height: 2-3 m. Accuracy ± 5 %. Rated power supply:220~240VAC, 50 Hz with Manual override and delay time 5sec -10 min. Protection class IP20 with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	6916	6916	6916	6916

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
20.1.17	Supply, installation , testing , commissioning of Duct smoke sensor of following specifications- supply voltage 24V/115/230VAC , 50 Hz or 24VDC .Air velocity 0.50-20 m/s. Ambient Temperature 14 to 122°F (0 to 50°C) Humidity 10-80% non-condensing. Protection class IP54 . with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	34578	34578	34578	34578
20.1.18	Supply, installation , testing , commissioning of Energy meter to monitor deferent electrical parameters such as voltage, current , frequency, power , power factor etc. on the inbuilt display and through BMS system.. Operating Temperature -10 to 50°C, Humidity 5-90% non-condensing. Protection class IP54 ,with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	27744	27744	27744	27744
20.1.19	Supply, Installation, Testing, Commissioning of Dual Technology Occupancy Sensor employs both passive infrared (PIR) and ultrasonic technology to accurately detect occupancy and automatically turn on lighting. 2000 sq. ft. coverage area 360 degree field of view Adjustable Sensitivity (from 60 to 100%), With Manual Bypass with relevant International standards. Compatible to Building Management System. CE/UL/CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	31527	31527	31527	31527
20.1.20	Supply, installation, testing, commissioning of water flow meter with the following specifications-.Pressure Limits 400 psi (27.6 bar) @ 100° F (37.8°C), Design flow 2-20 ft/s .Temperature limit 70°C. Protection class IP66 with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	209342	209342	209342	209342

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
20.1.21	Supply, installation, testing, commissioning of water flow switch with the following specifications-.Pressure Limits 10 bar .Temperature limit 70°C. Protection class IP65 . with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	15133	15133	15133	15133
20.1.22	Supply, installation, testing, commissioning of level switch with the following specifications-.Pressure Limits 100 psi .Temperature limit 100°C with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	12574	12574	12574	12574
20.1.23	Supply, installation, testing, commissioning of network thermostat with the following specifications-input voltage 220~230VAC 50 Hz or 24VAC 50 Hz , output voltage 3 nos for fan and 1 for valve : 220VAC or 24 VAC , 50 Hz, as per requirement of FCU. Operation temperature 0 ~ 49 °C (32 to 120°F),Relative humidity 5 ~ 90 % with built in temperature sensor and LCD Display .Protection class IP20 with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	35311	35311	35311	35311
20.1.24	Supply, installation, testing and commissioning of variable speed drive with integrated EMC / EMI filter of following capacities suitable for controlling motors of fans and pumps of HVAC system. Communication protocol: MODBUS/ BACnet. Supply voltage: 200-240 VAC 50 Hz or 380~480 VAC 50 Hz.Output voltage: 0-100% of supply voltage. Maximum output frequency 400 Hz. Protection against overheating , overcurrent, ground fault , phase loss. Ambient air temperature for operation: 50°C. IP20 protection class. with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
20.1.24.1	For 1.5 kW	Each	52966	52966	52966	52966
20.1.24.2	For 2.2 kW	Each	58011	58011	58011	58011
20.1.24.3	For 4.0 kW	Each	69360	69360	69360	69360
20.1.24.4	For 5.5 kW	Each	103410	103410	103410	103410
20.1.24.5	For 7.5 kW	Each	114760	114760	114760	114760
20.1.24.6	For 11.0 kW	Each	147549	147549	147549	147549
20.1.24.7	For 15.0 kW	Each	158898	158898	158898	158898
20.1.24.8	For 18.5 kW	Each	208081	208081	208081	208081
20.1.24.9	For 22.0 kW	Each	226998	226998	226998	226998
20.1.24.10	For 30.0 kW	Each	271136	271136	271136	271136
20.1.24.11	For 37.0 kW	Each	327886	327886	327886	327886
20.1.24.12	For 45.0 kW	Each	364457	364457	364457	364457
20.1.24.13	For 55.0 kW	Each	428773	428773	428773	428773
20.1.24.14	For 75.0 kW	Each	611633	611633	611633	611633
20.1.24.15	For 90.0 kW	Each	733959	733959	733959	733959

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
20.1.25	Providing and fixing of DDC enclosure of required size suitable for single DDC complete with relay base, channel, cooling fan ,locking arrangement .Accepted/Approved by the Engineer in Charge.	Each	15133	15133	15133	15133
20.1.26	Supplying, installation, testing & commissioning of 0-10 Volt dimmable lighting control system with built-in or separately provided programmable controller of minimum 4 channel I/O module / 0-10 V output module to supply 0-10 V continuous supply to Ballast/ driver with accessories .Supports BACnet /MODBUS/CBUS with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	125482	125482	125482	125482
20.1.27	Supplying, installation, testing & commissioning of DALI lighting control system with built-in or separately provided controller and DALI Lighting module ,supports 64 control device with accessories .Supports BACnet /MODBUS/CBUS with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	293836	293836	293836	293836
20.1.28	Supplying, installation, testing & commissioning of light sensor to convert a lux measurement into an electric signal , voltage signal of 0-10 V .Measuring range at least 0-300 lux with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	49183	49183	49183	49183

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
20.1.29	Supply and installation of power supply for DDC of the following specification- Output Voltage 24V/12 volt Output Power 30W + 10% Output Current 1.25A-2.5 A Input Voltage Range 90-264Vac Universal AC input voltage and full power up to 55°C Efficiency > 87.0% @ 115Vac & 230Vac Overvoltage / Overcurrent / Over Temperature Protections with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	17655	17655	17655	17655
20.1.30	Providing and fixing 12 Channel 10A Relay Module .supply voltage 15 to 36 V DC ,Network type AC/DC Device composition Socket-outlet Connector type Screw terminals Supply Frequency 47-53Hz and 57-63Hz Bus Supply Voltage 15-36VDC @ 0mA .Load Rating per Channel 10A AC3 Contact Type Voltage free, normally open, magnetically latched .Switch Operations Greater than 60,000 operations .Inrush Current 120A (20msec)with relevant International standards. Compatible to Building Management System. CE/UL/ CSA Certified. Accepted/Approved by the Engineer in Charge.	Each	56749	56749	56749	56749
20.1.31	Programming, Testing, Commissioning and Balancing of the entire BMS system including graphical design and presentation, tagging and identification as per direction of Engineer in Charge.	Each	567494	567494	567494	567494
20.1.32	Access Control Central Controller Based					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
20.1.32.1	Supply, Installation, Testing & Commissioning of central controller supporting up to 2 doors locally and at least 32 readers in total using expansion i/o modules, integration software with license (if required) of the following specification or equivalent- Input voltage: 12-24 Vdc +/- 20% ,micro SD supported, Ethernet Communication: 10BaseT/100Base-TX . Inputs: At least for exit button and door contact, Outputs: minimum 3 , relay type. Necessary power supply unit, enclosure included. Operating temperature: 0°C - +55°C. Regulatory: CE,UL,FCC. <i>Accepted /approved by the Engineer-in-charge.</i>	Each	118417	118417	118417	118417
20.1.32.2	Supply, Installation, Testing & Commissioning of single door access control module to be connected with central controller of the following specification or equivalent- Input voltage: 12-24 Vdc +/- 20% , Inputs: At least for exit button and door contact, Outputs: minimum 3 , relay type. Necessary power supply unit, enclosure included. Operating temperature: 0°C to +55°C. Regulatory: CE,UL,FCC. <i>Accepted /approved by the Engineer-in-charge.</i> Network Based Access Control (No Central Controller required)	Each	100888	100888	100888	100888

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
20.1.32.3	Supply, Installation, Testing & Commissioning of single door networkable access control unit has on-board TCP/IP to allow direct connection to a computer network including software with license (if required) of the following specification or equivalent- Input voltage: 12-24 Vdc +/- 20% ,micro SD supported, Ethernet Communication: 10BaseT/100Base-TX . Inputs: At least for exit button and door contact, Outputs: minimum 3 , relay type. Necessary power supply unit, enclosure included. Operating temperature: 0°C to +55°C. Regulatory: CE,UL,FCC. <i>Accepted /approved by the Engineer-in-charge</i> Accessories	Each	85124	85124	85124	85124
20.1.32.4	Supply and installation of Proximity Card reader of following specification or equivalent- Typical card range: 6 cm minimum Operating Voltage: 5-16 Vdc Operating temperature:-35°C to +66°C Environmental Rating: Indoor/Outdoor Transmit Frequency: 13.56 MHz or 125kHz Certifications: CE,UL,FCC. <i>Accepted /approved by the Engineer-in-charge</i>	Each	23330	23330	23330	23330

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
20.1.32.5	Supply and installation of Biometric reader of following specification or equivalent- Biometric: Fingerprint Sensor Type: Optical Sensor RF Option: 13.56 MHz credential compatible Template: ISO 19794-2 / ANSI 378 Operating Voltage: 12 Vdc Operating temperature:-10°C - +50°C Provision to use both or either fingerprint or card as per system requirement . Certifications: CE, FCC, RoHS <i>Accepted /approved by the Engineer-in-charge</i>	Each	44138	44138	44138	44138
20.1.32.6	Supply of proximity card of 13.56 MHz or 125 KHz Transmit frequency with both side printable feature, accepted/ approved by the Engineer-in-charge.	Each	631	631	631	631
20.1.32.7	Supply and installation of Electromagnetic door lock of following specification or equivalent- 600lbs holding force Dual voltage 12 & 24 Vdc Current drawn 500mA / 250mA MOV surge protection Push-off button on armature for instant release Dimension : - Magnet : 250(L) X 40(W) X 26(D) mm +-10% Armature Plate : 170(L) X 38(W) X 11(D) mm +-10% Operating Temperature : 0~55° C (32~131° F) Operating Humidity : 0~95% (non condensing) <i>Accepted /approved by the Engineer-in-charge</i>	Each	11980	11980	11980	11980

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
20.1.32.8	Supply and installation of Exit button of following specification or equivalent- controlled by door controller- unlock the door when it is pressed Operating Voltage : 10-14 Vdc or 125-250 Vac Operating Temperature : -20°C - +55°C Accented /approved by the Engineer-in-charge.	Each	5044	4908	4908	4908
20.1.32.9	Supply and installation of break glass unit for emergency door release of following specification or equivalent- Double pole double throw contacts (NO,NC,COM) Resettable with key Status indicator Embedded or surface mounting options Accented /approved by the Engineer-in-charge.	Each	6305	6135	6135	6135

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Subhead -20.2
Car Parking Management System

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
20.2.1	SECURITY PART					
20.2.1.1	BARRIER GATE					
	Supply, installation, testing and commissioning of 2mm thickness industrial grade steel Barrier Gate with remote control and manual switch for automated and manual release device to operate the barrier gate when power turns off, automatic reversing when the barrier boom meets the obstruction, auto closing realization through menu setting on the control panel, with available interfaces for infrared photocells, loop detectors, card readers, ticket dispensers, manual switch (wire control), traffic light, compatible to any communication complete as per following specification of working voltage: AC 110V- 220V AC 50Hz, Motor Power: 80W- 200W, Working Temperature: -40°C to 75°C, Protection level: IP65, Barrier arm size: 3 to 6 m, Arm opening and closing time: 1 to 6 sec, copper coil motor within net weight of 50-60Kg including the safety surge protection device. Brand and model of mentioned item will be approved by the Engineer-in-charge.					
		Each	130,208.00	130,208.00	130,208.00	130,208.00
20.2.1.2	LOOP DETECTOR					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installation, testing and commissioning of loop detector with induction coil which is based on advanced microprocessor technology and can work in diverse environments with two way output relays. output signals can be used for controlling door and gate drive mechanisms, operating barriers, controlling traffic light systems or activating card dispensers in parking lots to detect, monitor and safe-guard access ways or for counting vehicles. It should be compatible with following technical specification of supply voltage AC 110 V / 220V / DC12~24V, environmental compensation, automatic drift compensation, output method: Relay, relative humidity <90%, working temperature 40°C to +80°C,, frequency range 20 kHz to 170 kHz, coil inductance recommended 100 μH ~ 300 μH (including cable) with three levels of adjustable sensitivity levels.		11,842.00	11,842.00	11,842.00	11,842.00
20.2.1.3	RADIO FREQUENCY IDENTIFICATION CARD DISPENSER/ COLLECTOR Supply, installation, testing and commissioning of industrial grade design, adapt to various working temperature range and dustproof, automatic card dispenser(for entry point)/collector point (for exit point) including collection capacity of 40 cartridges with full capacity alarm function, pre-carding function, power supply unit equipped with compatible circuit breaker, LED Display, RFID Card reader and writer using the time waiting for the customer to use the pre-carding setting to ensure that the user can get the card without fail, supports I/O port and RS232 control, auto alarm of fault with patented sensing technology.Brand and model of mentioned item will be approved by the Engineer-in-charge	Each	153,879.00	153,879.00	153,879.00	153,879.00
20.2.1.4	RADIO FREQUENCY IDENTIFICATION CARD Supply, installation, testing and commissioning of RFID Card consists of a chip , memory card and an antenna made of PVC or PET compatible to frequency range minimum 125 KHz and chip set.	Each	44.00	44.00	44.00	44.00

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
20.2.1.5	LONG RANGE READER Supply, installation, testing and commissioning of ultra high frequency long range reader within frequency range 865-868 MHz (EU Standard), 902-928MHz (US Standard) maintaining ISO18000-6B/6C(EPC GEN2), 9-12 dbi built in linear antenna, functional to active/trigger/answer any working mode, compatible to any communication system such as RS232/RS485/WG26/TCP/IP with 9V power supply and working temperature -10 ~ 55 degree celcius and storage temp should exceed 75 degree celcius.					
20.2.1.5.1	5-6 meter	Each	44,138.00	44,138.00	44,138.00	44,138.00
20.2.1.5.2	10-15 meter	Each	69,360.00	69,360.00	69,360.00	69,360.00
20.2.1.6	LONG RANGE STICKER Supply, installation, testing and commissioning of Ultra High Frequency sticker maintaining ISO 18000-6C(EPC GEN2), IP 68 protocol which can read distance upto 15 meter according to tag size and reader and chip lifetime shouldn't less than 100000 times, data saving for 50 years. The sticker size can be 44*18mm/73.5*21.2mm/100*25mm/100*50mm where base material can be coated paper/PP synthetic paper and antenna material should be aluminium compatible to working temperature -40 degree celcius to 70 degree celcius.					
		Each	151.00	151.00	151.00	151.00
20.2.1.7	LONG RANGE METAL TAG					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installation, testing and commissioning of long range ultra high frequency metal tag which has an operating frequency of either 902-928 MHz (US) or 865-868 MHz (EU) or equivalent and is based on the Alien Higgs-3 IC or equivalent micro processor control, which provides industry-leading performance and up to maximum 30 meters read range. The UHF tag should be IP68-rated, making it suitable for harsh outdoor environments as well as exposure to water and contaminants and should have an operating temperature range of -20°C to +80°C) that can be attached using high-performance adhesives, via a rivet hole, or using a cable tie. The data retention Up to 50 Years, weight should be minimum 40 gm with approximate dimension of 130x42x10.5mm (LxWxT) with 2 holes.	Each	189.00	189.00	189.00	189.00
20.2.1.8	RFID DESKTOP CARD ISSUER Supply, installation, testing and commissioning of RFID desktop card issuer for card reading and writing with minimum frequency of 125 KHz and reading Range from 1-10 cm (depending on the card) and approximate Size of 130*90*50 mm and compatible to any communication system such as RS232/RS485/WG26/TCP/IP.	Each	12,611.00	12,611.00	12,611.00	12,611.00
20.2.1.9	LONG RANGE RFID DESKTOP CARD ISSUER Supply, installation, testing and commissioning of RFID desktop card issuer for card reading and writing with frequency 865-868 MHz (EU), 902-928 MHz (US) and reading Range from 1-20 cm (depending on the card) and approximate Size of 105*70*10 mm and compatible to any communication system such as RS232/RS485/WG26/TCP/IP with minimum RF power 13 dBm(decibels relative to one milliwatt) and as per approved by Engineer in charge.	Each	25,222.00	25,222.00	25,222.00	25,222.00
20.2.1.10	ANPR CAMERA					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installation, testing and commissioning of smooth video streaming at a minimum resolution of 4 Mega Pixel with 1/3" Progressive Scan CMOS sensor, minimum 8 mm lens, minimum Video Resolution of 2560 x 1440 Pixel resolution including IR Cut Filter(Day/night), Up to 50 m IR Range, Connectivity to IP Camera with ingress protection IP67, bullet type CCTV Housing compatible to Power Supply: 12 VDC $\pm$ 25%, 5.5 mm Coaxial Power Plug including the mounting accessories.	Each	25,222.00	25,222.00	25,222.00	25,222.00
20.2.1.11	SOFTWARE FOR ANPR Supply, installation, testing and commissioning of synchronizing software embedded with LPR algorithm for image to text conversion which should support plate cutout, overview picture snapshot, and video recording embedded with white list database and capable to generate report according to the direction of Engineer-in-charge.	Each	315,275.00	315,275.00	315,275.00	315,275.00
20.2.2	GUIDANCE PART					
20.2.2.1	PARKING SENSOR WITH INDICATOR LIGHT Supply, installation, testing and commissioning of integrated ultrasonic sensor with built-in LED light compatible in working voltage: 12 ~ 28V (rated 24V) with following specification: Shell material: ABS plastic Color: red/green (build-in LED) Communication: Any appropriate system TCP/IP/UDP/RS485 selected by Engineer-in-charge Installation height may vary from 1.8m ~ 3.0m. But in general, recommended height for installation is 2.5m.	Each	5,675.00	5,675.00	5,675.00	5,675.00
20.2.2.2	ZONAL CONTROLLER					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installation, testing and commissioning of zonal controller box which can connect up to 120 ultrasonic detector lamps, gathers and forwards vacancy information from all the detectors to the Central Control Unit, and also forwards commands from the Central Control Unit to the LED information panels connected to it for displaying proper vacant information with approximate dimension of 320 × 260 × 90mm including power adapter working in AC220V voltage, compatible to any communication system such as RS232/RS485/WG26/TCP/IP covering distance of minimum 300m.. The capacity of zonal controller can be maximum 120 while recommended no of sensors and LED displays may vary from 60~80 nos.	Each	153,879.00	153,879.00	153,879.00	153,879.00
20.2.2.3	CENTRAL COLLECTOR Supplying, installing, testing and commissioning of central controller with power adapter box compatible to work in AC220V 2.5A and any communication system such as RS232/RS485/WG26/TCP/IP. The dimension of the controller box should be approved by the Engineer-in-charge and nodal communication distance should be minimum 1000m. Capacity of the central controller box should not less than 62 node controllers. The Central Control Unit gathers and forwards information from all the Zone Controllers to the parking guidance server for management operation. It can also provide vacancy information to additional level or area vacancy LED display boards connected. The working temperature should be in the range of -20+80°C, rate voltage should be AC 220V with frequency ranging from 50~60Hz.	Each	46,043.00	46,043.00	46,043.00	46,043.00
20.2.2.4	ONE DIRECTIONAL DISPLAY					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installation, testing and commissioning of one directional arrow indoor LED with IP 54 ingress protocol, 5 digit display with dimension of approximately 735x250x90 (mm), compatible to any communication system such as TCP/IP/UDP/RS485, supports web update, Aluminium frame housing, black color painted acrylic panel, white words with back light, display colors should be in red and green, aluminium frame housing and all necessary civil works for installation.	Each	69,360.00	69,360.00	69,360.00	69,360.00
20.2.2.5	TWO DIRECTIONAL DISPLAY Supply, installation, testing and commissioning of two directional arrow marked Indoor Single LED display with IP 54 ingress protocol, marked , 12-digit number with dimension of approximately 1342x250x90(mm), compatible to communication system such as TCP/IP/UDP/RS485 with surface paste bright, red and green color, Aluminium frame housing and all necessary civil works for installation.	Each	59,650.00	59,650.00	59,650.00	59,650.00
20.2.2.6	THREE DIRECTIONAL DISPLAY Supply, installation, testing and commissioning of three directional arrow marked Indoor Single LED display with IP 54 ingress protocol, marked, 12-digit number with dimension of approximately 2010x250x90(mm), compatible to communication system such as TCP/IP/UDP/RS485 with surface paste bright, red and green color, Aluminium frame housing and all necessary civil works for installation.	Each	62,626.00	62,626.00	62,626.00	62,626.00
20.2.2.7	MAIN DISPLAY					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installation, testing and commissioning of main display with approximate dimension of Housing 2200*750*200mm (L*W*T) for the LED module with approximate dimension 640*160mm (L*H) with IP65 ingress protocol. Display color of LED monitor may be LED red or Green color.	Each	126,110.00	126,110.00	126,110.00	126,110.00
20.2.2.8	SERVER PC Supply and installation of server pc with following configuration: Motherboard: Intel Chipset CPU: Intel Core i7 3.6 GHz or equivalent RAM: 8GB DDR4 minimum HDD: 2 TB SATA+ 240GB SSD minimum Casing: ATX Handle Monitor: 21.5" LED minimum Keyboard: A4 Tech or equivalent USB Mouse: A4 Tech USB or equivalent UPS: Offline 1200 VA minimum Brand and model of mentioned item will be approved by the Engineer-in-charge.	Each	126,110.00	126,110.00	126,110.00	126,110.00
20.2.2.9	PARKING GUIDANCE SOFTWARE WITH LICENSE					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply, installing, testing and commissioning of Linux/Windows or any other compatible operating system based level counting and parking guidance system software which should provide centralized count management, monitoring and guidance control for parking facilities that have multiple entry and exit points and/or several individual levels or nested parking areas. It should facilitate the benefits to small car parks as well as large, multi-level car parks. Key occupancy information and alarm indications need to be displayed on graphical user interface. The counting modules are needed to monitor all entry lanes, exit lanes and access points between levels and areas and store counts locally on physical counters. These features need to be ensured to the software through a network connection. The software should maintain a database of all physical counters and their values, and processes the count information as necessary. It needs to calculate and maintain values such as available spaces on individual levels, overall occupancy levels etc which can be used for on-screen displays of important summary information and for driving message signs that are strategically placed around the car parking facility. This will guide the drivers to those areas where there are more parking spaces, avoiding delays. In addition, the parking facility administrator should have access to a wealth of useful information including real-time occupancy data, early indications of potential problems and a continuous count log to facilitate the statistical analysis of daily occupancy patterns, space utilization.					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Features: -Client/Server structure supports multiple control/monitoring stations -Supports Counting Modules (128 physical counters) -Supports up to Variable Message Signs -Compatible to RS232/RS485/WG26/TCP/IP -Graphical views with floor plans -Flexible counting and response action settings -Comprehensive range of display options -Audible alarms -Fully centralized count management -Count logging and Reporting -Scalable license facilitates cost-effective solutions for all sizes of car park Any change in parking guidance	Each	252,220.00	252,220.00	252,220.00	252,220.00
20.2.3	SAFETY PART					
20.2.3.1	RUBBER/PLASTIC SPEED BREAKER Supply and installation of high grade pvc plastic or rubber speed breaker with approximate dimension of 500*350*50 mm with load capacity of minimum 30 tons, black and yellow color, anti-slip, anti-crash & anti-UV materials which slow down the speed of the vehicles.	Each	2,018.00	2,018.00	2,018.00	2,018.00
20.2.3.2	RUBBER/PLASTIC COLUMN GUARD Supply and installation of high grade PVC plastic or rubber speed breaker with approximate dimension size: 800*100*10 mm, material should be soft rubber/plastic with safety traffic red/green/white/yellow reflector.	Per Meter	1,261.00	1,261.00	1,261.00	1,261.00
20.2.3.3	RUBBER/PLASTIC WHEEL STOPPER					

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply and installation of high grade PVC plastic or rubber speed breaker with approximate dimension size of 560*150*100 mm, material should be soft rubber/plastic with safety traffic yellow reflector.	Each	946.00	946.00	946.00	946.00
20.2.3.4	PLASTIC METAL ROAD STUD Supply and installation of plastic road stud to raise pavement mark with minimum flexural Strength of 9300N and made of PMMA+ABS material or equivalent material.	Each	946.00	946.00	946.00	946.00
20.2.3.5	PARKING SAFETY MIRROR Supply and installation of PMMA Convex safety mirror in the parking area for proper guidance of the vehicles with acrylic mirror face and PP mirror back with wide viewing angle of minimum 130 degree.					
20.2.3.5.1	Size: 600mm	Each	11,980.00	11,980.00	11,980.00	11,980.00
20.2.3.5.2	Size: 800mm	Each	13,242.00	13,242.00	13,242.00	13,242.00
20.2.3.5.3	Size: 1000mm	Each	14,503.00	14,503.00	14,503.00	14,503.00

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Subhead -21
Miscellaneous
Fan, IPS, Dehumidifier, Geyser, Energy Meter, UPS Etc.

Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
21.1	CEILING FAN Supplying & fixing AC capacitor type ceiling fan (without regulator) of following specifications and sizes complete with minimum 305 mm (1 ft) long and 0.75 -1.0" dia, 2.3 mm thickness MS pipe down rod, tempered cast aluminum blades, 2.5 µf 400V AC capacitor, canopy, double Z ball bearing, best quality silicon sheet core, best quality copper made super enamel wire, aluminum alloyed casting body / metal body having safety pin with powder coated heat / docu paint as required as per BDS 818 etc. connecting PVC wire complete as required. Rated voltage : 230 volts Rated frequency : 50 Hz Rated speed : 300 rpm ± 5 % Service value : Minimum 3.5 m3 / min / watt Temperature rise : Maximum 55°C Class of Insulation : Minimum E Noise level : Maximum 60 dB at a distance of 1 meter.					
21.1.1	1442 mm. (56") Sweep					
21.1.1.1	Input power : Maximum 65 watt.	Each	4,023.00	4019	4006	4006
21.1.1.2	Input power : Maximum 70 watt.	Each	3,834.00	3830	3817	3817
21.1.2	1220 mm. (48") Sweep					
21.1.2.1	Input power : Maximum 65 watt.	Each	3,720.00	3716	3704	3704
21.1.2.2	Input power : Maximum 70 watt.	Each	3,594.00	3590	3578	3578

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
21.2	EXHAUST FAN Providing and fixing of following axial flow AC capacitor type wall mounted exhaust fan complete with blade, steel frame standard wall louver shutter, PVC insulated connecting wire etc. complete as required including cutting wall and mending good the damages as per direction of the Engineer.					
21.2.1	8" Exhaust fan plastic body (foreign made accepted / approved by the Engineer).	Each	1,375.00	1370	1354	1354
21.2.2	10" Exhaust fan plastic body (foreign made accepted / approved by the Engineer).	Each	1,450.00	1445	1429	1429
21.2.3	12" Exhaust fan plastic body (foreign made accepted / approved by the Engineer).	Each	1,627.00	1622	1605	1605
21.3	WALL BRACKET FAN Providing and fixing of wall bracket fan of following sizes complete with blade, frame, built-in regulator, PVC insulated connecting wire etc. as required as per direction of the Engineer. (Foreign made)					
21.3.1	12" sweep (Plastic body and blade)	Each	2,447.00	2443	2431	2431
21.3.2	16" sweep (Plastic body and blade)	Each	2,762.00	2758	2745	2745
21.3.3	16" sweep (steel body and blade)	Each	3,392.00	3388	3376	3376
21.4	FAN CLAMP					
21.4.1	Providing & fixing box type fan clamp made of 25.4 mm. x 6.35 mm. (1"x ¼") MS flat bar using a 12 mm. dia MS rod having at least 750 mm clearance around and shall be placed above the MS rod mesh of the roof slab including necessary bolts, nuts etc. as required as per sample approved by the Engineer.	Each	177.00	177	176	176
21.4.2	Providing & fixing U type fan clamp made of 12 mm. dia MS rod having at least 750 mm clearance around and shall be placed above the MS rod mesh of the roof slab including necessary bolts, nuts etc. as required as per sample approved by the Engineer.	Each	139.00	139	138	138

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
21.5	HEAVY DUTY INDUSTRIAL EXHAUST FAN					
	Supply and installation of Wall mounted heavy duty industrial exhaust fan: Type 230V-240V / 400V-415V, 50 Hz, complete with stainless steel blade, steel frame, standard wall louver shutter with necessary accessories (specially used for kitchen of hospital, student hostel / hall, prison cell, barrack, large auditorium etc).					
				0	0	0
21.5.1	16"	Each	3,531.00	3530	3526	3526
21.5.2	18"	Each	3,783.00	3782	3778	3778
21.5.3	24"	Each	4,603.00	4601	4598	4598
				0	0	0
21.6	PEDESTAL FAN			0	0	0
21.6.1	16" Sweep with remote control	Each	5,107.00	5108	5108	5108
21.6.2	22" Sweep without remote control	Each	7,251.00	7252	7252	7252
21.6.3	24" Sweep without remote control	Each	7,630.00	7630	7630	7630
				0	0	0
				0	0	0
				0	0	0
				0	0	0
21.7	FAN REPAIRING			0	0	0
	Full-re-winding the fan by required size of super enameled copper wire, ampere tube, cotton tape, leatheroid paper including heating, varnishing, testing etc. complete as required (dismantle wires shall be taken by the contractor).					
				0	0	0
21.7.1	56" AC ceiling fan	Each	1,324.00	1323	1319	1319
21.7.2	48" AC ceiling fan	Each	1,135.00	1134	1129	1129
21.7.3	Pedestal fan	Each	1,261.00	1260	1256	1256
21.7.4	Exhaust fan	Each	1,072.00	1071	1067	1067
				0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
21.8	Spray painting the 56" / 48" AC ceiling fan body with blade, canopy, down rod after scraping out the old paint, with anti-corrosive enamel paint etc. with replacing the defective split pin, jam nut, screw etc. including dismantling and re-fixing the fan to the existing place with proper electrical connection.	Each	277.00	276 0	271 0	271 0
21.9	Brush painting AC ceiling fan body with blade, canopy, down rod after scraping out the old paint, with anti-corrosive enamel paint etc. with replacing the defective split pin, jam nut, screw etc. including dismantling and re-fixing the fan to the existing place with proper electrical connection.	Each	227.00	226 0	221 0	221 0
21.10	LABOUR CHARGE			0	0	0
21.10.1	Labour charge for re-metalling, smoothing the bearing housing or fixing sleeves in the bearing housing of fan.	Each	145.00	141	133	133
21.10.2	Labour charge for fixing bearing.	pair	105.00	102 0 0 0 0	96 0 0 0 0	96 0 0 0 0
21.11	CAPACITOR FOR FAN Supply & installation of the following size fan capacitor (foreign made or equivalent brand accepted / approved by the Engineer).			0	0	0
21.11.1	2.5 μ F	Each	158.00	156	152	152
21.11.2	2.8 / 3.5 μ F	Each	164.00	162 0 0	159 0 0	159 0 0
21.12	IPS Supply and installation of following capacity instant power supply (IPS / EPS) complete with central processing unit for 2 hrs. back up service suitable for input supply 220 volt $\pm$ 27%, single phase 50 Hz for output voltage 220 volt $\pm$ 5%, 50 Hz single phase with necessary wiring for light & fan by supplying & fixing all materials as required & complete in all respect as per sample approved by the Engineer.			0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
21.12.1	350 VA	Each	31,654.00	31650	31642	31642
21.12.2	600 VA	Each	37,329.00	37325	37317	37317
21.12.3	1000 VA	Each	48,678.00	48675	48666	48666
21.12.4	1500 VA	Each	69,487.00	69483	69474	69474
21.12.5	2000 VA	Each	82,098.00	82093	82085	82085
21.12.6	3000 VA	Each	132,541.00	132536	132528	132528
				0	0	0
21.13	IPS BATTERY			0	0	0
	Supply of the following IPS batteries inconformity with BDS IEC standard accepted / approved by the Engineer.					
				0	0	0
21.13.1	Volt:12V, Amp:70-80AH	Each	12,233.00	12230	12221	12221
21.13.2	Volt:12V, Amp:100-110AH	Each	12,579.00	12576	12568	12568
21.13.3	Volt:12V, Amp:120-130AH	Each	15,764.00	15761	15752	15752
21.13.4	Volt:12V, Amp:150-165AH	Each	19,169.00	19166	19157	19157
21.13.5	Volt:12V, Amp:180-200AH	Each	22,321.00	22318	22310	22310
21.14	AUTOMATIC VOLTAGE STABILIZER			0	0	0
	Supply & fixing of Automatic Voltage Stabilizer of following capacities suitable for Input Voltage 140 to 260 Volt, single phase, 50 Hz. for output 220 Volt + 5%, 50 Hz. response within 0.02 sec. with digital control circuit complete as required as per sample accepted / approved by the Engineer.					
				0	0	0
21.14.1	500 VA	Each	5,423.00	5420	5411	5411
21.14.2	1000 VA - 1200 VA	Each	5,608.00	5605	5597	5597
21.14.3	2000 VA	Each	7,062.00	7059	7050	7050
21.14.4	3000 VA	Each	11,476.00	11474	11464	11464
				0	0	0
21.15	DEHUMIDIFIER			0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Supply & installation of automatic dehumidifier of following water / moisture extraction capacity workable with relative humidity range 30 - 100% complete with hermetically sealed compressor, thermal & overload protector, blower fan, copper made evaporation & condenser coil with aluminum fins protection, stainless steel moisture container, automatic humidistat to turn the unit "ON" or "OFF" at preselected moisture level, adjustable moisture controller & all other standard accessories suitable for operation at 220 / 240 V, 50 Hz, single phase, AC supply complete as per sample accepted / approved by the Engineer. Major components shall be or made in USA / JAPAN / AUSTRALIA/ EU Countries or equivalent accepted / approved by the Engineer.			0	0	0
21.15.1	16 - 20 litres / 24 hr. (suitable for 2000 cft area) Outer body made of stainless steel	Each	22,826.00	22823	22815	22815
21.15.2	25 - 35 litres / 24 hr. (suitable for 3000 cft area) Outer body made of stainless steel	Each	25,348.00	25345	25337	25337
21.15.3	40- 50 liters / 24 hr. (suitable for 4000 cft area) Outer body made of stainless steel	Each	35,437.00	35434	35425	35425
21.15.4	70 -80 liters / 24 hr. (suitable for 5000 cft area) Outer body made of stainless steel	Each	56,876.00	56871	56863	56863
				0	0	0
21.16	WATER HEATER / GEYSER			0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Providing & installation of following capacity electrically operated water heater containing blue diamond inner tank made of minimum 14 SWG, magnesium anode rod, non-magnetic rust proof galvanized steel & outer jacket, body made of minimum 22 SWG mild steel sheet & 20 mm polyurethane thermal insulation with automatic thermostatic switch with suitable wattage range of stainless steel Incoloy 800 glass line immersion heating element, thermal cut-out, on-off indicating lamp, Earth Leakage Circuit Breaker (ELCB), safety valve 0.8 MPa, inlet and outlet water connection pipe including fixing accessories all complete as required with adequate safety measures in conformity with codes and specification of international standards. Suitable for use in tropical country like BANGLADESH. Model and sample to be approved by competent authority.			0	0	0
21.16.1	Suitable for maximum six storied building			0	0	0
21.16.1.1	30 liter / hr. (1000 ~ 1500 watt) wall mounting type.	Each	8,954.00	8944	8910	8910
21.16.1.2	45 liter / hr. (1000 ~ 1500 watt) wall mounting type.	Each	10,215.00	10206	10171	10171
21.16.1.3	65 liter / hr. (1500 ~ 2000 watt) wall mounting type.	Each	11,476.00	11467	11432	11432
21.16.1.4	90 liter / hr. (2000 ~ 2500 watt) wall mounting type.	Each	14,629.00	14619	14586	14586
21.16.1.5	110 liter / hr. (2000 ~ 2500 watt) wall mounting type.	Each	22,195.00	22186	22152	22152
				0	0	0
21.16.2	Suitable for above six storied building			0	0	0
21.16.2.1	30 liter / hr. (1000 ~ 1500 watt) wall mounting type.	Each	10,215.00	10206	10171	10171
21.16.2.2	45 liter / hr. (1000 ~ 1500 watt) wall mounting type.	Each	11,476.00	11467	11432	11432
21.16.2.3	65 liter / hr. (1500 ~ 2000 watt) wall mounting type.	Each	12,737.00	12728	12693	12693
21.16.2.4	90 liter / hr. (2000 ~ 2500 watt) wall mounting type.	Each	15,890.00	15880	15847	15847
21.16.2.5	110 liter / hr. (2000 ~ 2500 watt) wall mounting type.	Each	23,456.00	23448	23413	23413
				0	0	0
21.17	COMPONENT OF WATER HEATER			0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
	Providing & fixing the following component (USA / UK / ITALY / GERMANY) of the electrically operated water heater or equivalent as per sample approved by the Engineer. Brass / stainless steel immersion heating element.			0	0	0
21.17.1	1000 ~ 1500 watt	Each	2,800.00	2800	2797	2797
21.17.2	1500 ~ 2000 watt	Each	3,430.00	3431	3427	3427
21.17.3	2000 ~ 2500 watt	Each	4,691.00	4692	4689	4689
				0	0	0
21.18	Adjustable type thermostat control (30° to 80°C) for electrically operated water heater.	Set	2,169.00	2170	2166	2166
21.19	Temperature & pressure relief valve 125 psi, 99°C for electrically operated gas fired water heater.	Set	5,952.00	5953	5950	5950
21.20	Pilot lamp	Set	2,636.00	2636	2634	2634
21.21	Thermocouple	Set	6,583.00	6583	6581	6581
				0	0	0
21.22	ENERGY METER			0	0	0
21.22.1	Providing & fixing 230V, 50Hz, single phase, 10 – 40 Amps electric energy meter (KWH meter) steel body with glass cover on prepared board in conformity with BDS IEC standard accepted/approved by engineer in charge.	Each	1,728.00	1728	1726	1726
21.22.2	Providing & fixing 230 V, 50 Hz, single phase 10-40 Ampere electronics digital energy meter (KWH meter) steel body with glass cover on prepared board in conformity with BDS IEC standard.	Each	2,232.00	2232	2229	2229
21.22.3	Providing & fixing 415V + 10%, 50Hz three phase electronics digital energy meter (KWH meter) steel body with glass cover on prepared board in conformity with BDS IEC standard.			0	0	0
21.22.3.1	10-100 Amps (Single Tariff)	Each	6,772.00	6772	6770	6770
21.22.3.2	10-100 Amps (Double Tariff)	Each	8,664.00	8664	8661	8661
				0	0	0
				0	0	0
				0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
				0	0	0
				0	0	0
				0	0	0
21.23	UPS (Off LINE)			0	0	0
	Supply of following uninterruptible power supply (UPS) complete with central processing unit suitable for input supply 160 - 275 volt AC single phase, 50 Hz for output voltage 220 volt $\pm$ 5%, 50 Hz single phase having protection for lightning & surge, blackout, over & under voltage, overload, battery low and over-charge etc. complete as required as per sample approved by the Engineer.					
				0	0	0
21.23.1	Back-up time : 15 minutes at full-load			0	0	0
21.23.1.1	600 / 650 VA	Each	5,738.00	5737	5733	5733
21.23.1.2	1000 VA	Each	9,521.00	9520	9516	9516
21.23.1.3	1500 VA	Each	15,890.00	15887	15878	15878
21.23.1.4	2000 VA	Each	20,934.00	20932	20923	20923
21.23.2	Back-up time : 30 minutes at full load.			0	0	0
21.23.2.1	600 / 650 VA	Each	7,037.00	7036	7028	7028
21.23.2.2	1000 VA	Each	10,845.00	10843	10834	10834
21.23.2.3	1500 VA	Each	19,043.00	19040	19030	19030
21.23.2.4	2000 VA	Each	28,501.00	28498	28489	28489
21.23.3	Back-up time : 60 minutes at full load.			0	0	0
21.23.3.1	600 / 650 VA	Each	8,298.00	8297	8289	8289
21.23.3.2	1000 VA	Each	13,368.00	13365	13356	13356
21.23.3.3	1500 VA	Each	25,348.00	25345	25337	25337
21.23.3.4	2000 VA	Each	40,481.00	40478	40469	40469
21.23.4	Back-up time : 120 minutes at full load.			0	0	0
21.23.4.1	600 / 650 VA	Each	38,208.00	38206	38202	38202
21.23.4.2	1000 VA	Each	49,005.00	49001	48993	48993

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
21.23.4.3	1500 VA	Each	99,255.00	99250	99242	99242
21.23.4.4	2000 VA	Each	114,481.00	114477	114468	114468
				0	0	0
21.24	UPS (ON LINE) SINGLE PHASE TO SINGLE PHASE					
	Supply of following uninterruptible power supply (UPS) complete with central processing unit suitable for input supply 160 - 275 volt AC single phase 50 Hz for output voltage 220 volt $\pm$ 1%, 50 Hz single phase having protection for lightning & surge, blackout, over & under voltage, overload, battery low and over-charge etc. complete as required as per sample approved by the Engineer.					
				0	0	0
21.24.1	Back-up time : 15 minutes at full-load			0	0	0
21.24.1.1	1 KVA	Each	30,392.00	30389	30381	30381
21.24.1.2	2 KVA	Each	69,487.00	69483	69474	69474
21.24.1.3	3 KVA	Each	75,918.00	75911	75895	75895
21.24.1.4	6 KVA	Each	170,627.00	170618	170591	170591
21.24.1.5	10 KVA	Each	221,071.00	221060	221034	221034
21.24.2	Back-up time : 30 minutes at full load			0	0	0
21.24.2.1	1 KVA	Each	48,048.00	48044	48036	48036
21.24.2.2	2 KVA	Each	101,014.00	101009	101001	101001
21.24.2.3	3 KVA	Each	113,751.00	113744	113728	113728
21.24.2.4	6 KVA	Each	246,293.00	246281	246255	246255
21.24.2.5	10 KVA	Each	296,736.00	296724	296698	296698
21.24.3	Back-up time : 60 minutes at full load			0	0	0
21.24.3.1	1 KVA	Each	73,270.00	73266	73257	73257
21.24.3.2	2 KVA	Each	138,847.00	138842	138833	138833
21.24.3.3	3 KVA	Each	183,112.00	183103	183087	183087
21.24.3.4	6 KVA	Each	334,569.00	334557	334530	334530
21.24.3.5	10 KVA	Each	460,679.00	460665	460638	460638
21.24.4	Back-up time : 120 minutes at full load			0	0	0

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Item No.	Description of Items	Unit	Unit Rate in Dhaka & Mymensingh Zone (Tk)	Unit Rate in Chattogram & Sylhet Zone (Tk)	Unit Rate in Khulna, Barishal & Gopalganj (Tk)	Unit Rate in Rajshahi & Rangpur (Tk)
21.24.4.1	1 KVA	Each	94,708.00	94704	94695	94695
21.24.4.2	2 KVA	Each	182,985.00	182979	182971	182971
21.24.4.3	3 KVA	Each	227,250.00	227240	227224	227224
21.24.4.4	6 KVA	Each	427,193.00	427179	427152	427152
21.24.4.5	10 KVA	Each	599,400.00	599382	599356	599356

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Subhead-21
Annexure-21

RECOMMENDED FAN SIZES IN ROOMS

Room Area (metre ²)	Fan Sweep
Up To 6	915 mm
Over 6 to 9	1220 mm
Over 9 to 12	1442 mm

Note : -

- * Fan Spacing : 3.0 to 3.5 m (both direction).
- * Fan Height : 2.5 m from the floor.

