

**SETTING UP OF EDUTAINMENT COMPONENTS FOR SCIENCE CITY AT KOTTAYAM**

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Rates of only ISI marked conduits, cables, switches and socket outlets were taken in the following items. Unless and otherwise specified, only such conduits, cables, switches and socket outlets shall be used in the work.				
	<b>PART 1 - CPWD</b>				
1	Point wiring in PVC conduit, with modular type switch.				
	K				
	Group C	64	Point		
2	Twin control point wiring in PVC conduit, with modular type switch:				
	Wiring for twin control light point with 1.5 sq.mm FRLS PVCinsulated copper conductor single core cable in surface / recessedmedium class PVC conduit, 2 way modular switch, modular plate,suitable GI box and earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc as required.	1	Point		
3	Wiring for circuit/ sub main:				
	Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required.				
3.1	2x1.5 sq.mm + 1x1.5sqmm earth wire	750	Rm		
3.2	2x2.5 sq.mm + 1x2.5sqmm earth wire	350	Rm		

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3.3	2x4 sq.mm + 1x4sqmm earth wire	175	Rm		
4	Telephone wiring in existing conduit:				
	Supplying and drawing following pair 0.5 mm dia FRLS PVCinsulated annealed copper conductor, unarmored telephone cable in the existing surface/ recessed steel/ PVC conduit as required				
	2 Pair	150	Rm		
5	TV cable in existing conduit:				
	Supplying and drawing co-axial TV cable RG-6 grade, 0.7 mmsolid copper conductor PE insulated, shielded with fine tinnedcopper braid and protected with PVC sheath in the existingsurface/ recessed steel/ PVC conduit as required.	150	Rm		
6	PVC conduit:				
	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cuttingthe wall and making good the same in case of recessed conduitas required.				

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6.1	20mm	305	Rm		
6.2	25mm	910	Rm		
6.3	32mm	65	Rm		
7	Modular type switch /socket:				
	Supplying and fixing following modular switch/socket on the existing modular plate & switch box including connections but excluding modular plate etc as required.				
7.1	5/6 amps switch	10	Each		
7.2	2 way 5/6 amps switch	1	Each		

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7.3	Telephone socket outlet	5	Each		
7.4	TV antenna socket outlet	5	Each		
8	Modular type electronic fan regulator:				
	Supplying and fixing stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc as required.	12	Each		
9	Modular type blanking plate:				
9.1	Supplying and fixing modular blanking plate on the existing modular plate as required.	2	Each		
	Modular boxes, base & cover plate:				
	Supplying and fixing following size/modules, GI box along with modular base & cover plate for modular switches in recess etc as required				
9.2	1 or 2 Module (75mm x 75mm)	11	Each		

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S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
9.3	3 Module (125mm x 75mm)	4	Each		
10	S/F 6A & 16A socket with switch				
10.1	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3pin 5/6 amps modular socket outlet and 5/6 amps modular switch, connection etc as required.	13	Each		
10.2	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6pin 15/16 amps modular socket outlet and 15/16 amps modular switch, connection etc as required.	14	Each		
11	Ceiling rose:				
	Supplying and fixing 3 pin, 5amps, ceiling rose on the existing junction box\ wooden block including connection etc as required.	12	Each		
12	Erection of Wall/ceiling light/ LED fittings:				
	Erection of wall bracket/ ceiling fittings/ LED fittings of all sizes and shapes containing LED lamps per fitting, complete with all accessories including connection etc. as required.	72	Each		
13	ITC flourescent/ LED fitting directly on surface:				

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PART I B - ELECTRICAL WORKS					
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
	Installation, testing and commissioning of pre-wired, fluorescent fitting/ compact fluorescent fitting/ LED fitting of all types, complete with all accessories and tube etc directly on ceiling/ wall, including connection with 1.5 sq.mm FR PVC insulated, copper conductor, single core cable and earthing etc. as required.	2	Each		
14	ITC fluorescent/ LED fitting with down rods:				
	Installation, testing and commissioning of pre-wired, fluorescent fitting/ compact fluorescent fitting/ LED fitting of all types, complete with all accessories and LED lamp/tube including supplying and fixing ball and socket arrangement, 2 no down rods of 20 mm dia x 1.6 mm thick steel conduit upto 30cm length, painting and wiring the down rods and connection with 1.5 sq.mm FR PVC insulated, copper conductor, single core cable and earthing etc. as required.	12	Each		
15	S/F Extra down rod				
	Providing and fixing extra conduit down rod of 20mm dia, 2x10 cm length wiring with 2x1.5 sqmm FRLS PVC insulated, copper conductor, single core cable including painting etc. as required. (Note: More than 5cm shall be rounded to the nearest 10cm and 5cm or less shall be ignored)	24	Each		
16	ITC ceiling fan:				
	Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (up to 30cm)with 1.5 sq.mm FR PVC Insulated, copper conductor, single core cable etc as required.	12	Each		
17	Numbering of fan/fittings:				

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S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
	Numbering of ceiling fan/exhaust fan/flourscent fitting as required.	12	Each		
18	Supply & Drawing UTP cable:				
	Supplying and drawing of UTP 4 pair CAT 6 LAN cable in the existing surface/ recessed steel/ PVC conduit as required.	1050	Rm		
19	S/F TP MCCB DB:				
	Supplying and fixing following ways, surface/recess mounting, vertical type, 415 volts, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200A tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCB's with provision for 100A TP 25kA MCCB as incomer, interconnection between incomer MCCB and busbars (but without MCCB/MCB) as required				
19.1	8 way (8 + 24), Double door	1	Each		
20	S/F TP MCB DB:				
	Supplying and fixing following ways, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 volts, on surface/ recess, complete with tinned copper bus bar, neutral bubar, earth bar, din bar, detachable gland plate, interconnections, phosphatised and powder painted including earthing etc. as required(But without MCB/RCCB/Isolator)				

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20.1	4 way (8 + 12), Double door	2	Each		
20.2	8 way (8 + 24), Double door	2	Each		
21	S/F SP MCB DB:				
	Supplying and fixing following ways, horizontal type single pole and neutral, sheet steel, MCB distribution board, 240 volts, on surface/ recess, complete with tinned copper bus bar, neutral bubar, earth bar, din bar, detachable gland plate, interconnections, phosphatised and powder painted including earthing etc. as required(But without MCB/RCCB/Isolator)				
	12 way (4 + 12), Double door	1	Each		
22	MINIATURE CIRCUIT BREAKERS ('C' SERIES)/ ISOLATORS				
	'C' series, SP MCB:				
	Supplying and fixing 5 amps to 32 amps rating, 240 Volts, 'C' curve, miniature circuit breaker suitable for inductive and other loads of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
22.1	Single pole	85	Each		

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22.2	Triple pole	5	Each		
23	MCB ISOLATORS				
	Supplying and fixing following rating, double pole, 240 volts, isolators in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
23.1	32A	1			

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	Supplying and fixing following rating, four pole, 415 volts, isolators in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
23.2	32/40A	4	Each		
24	RCCB				
	Supplying and fixing following rating, double pole, (single phase and neutral), 240 volts, residual current circuit breaker (RCCB),having a sensitivity current upto 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
24.1	25A 30mA DP RCCB	1	Each		
	Supplying, fixing, testing and commissioning four pole, 415 volts, residual current circuit breaker RCCB of the following rating and sensitivity current in the existing MCB DB complete with connections, etc. as required.				
24.2	40A 100mA FP RCCB	2	Each		

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24.3	25A 30mA FP RCCB	2	Each		
25	ENCLOSURES				
	Supplying and fixing DP sheet steel enclosure on surface/ recess along with 25/32amps 240 volts "C" curve DP MCB Isolator complete with connections, testing and commissioning etc. as required.	1	Each		
	MISCELLENEOUS				
26	Supplying and fixing 20 amps, 240 volts, SPN industrial type, socket outlet, with 2 pole and earth, metal enclosed plug top along with 20 amps C curve, SP, MCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket outlet and complete with connections, testing and commissioning etc. as required.	4	Each		
27	Providing and fixing MV danger notice plate of 200mmx150mm, made of mild steel, atleast 2mm thick, and vitreous enameled white on both sides, and with inscription in single red colour on front side as required.	1	Each		
28	Providing and laying G.I. tape 32 mm X 6 mm from earth electrode directly in ground as required.	200	Rm		
29	CABLE TRAYS				

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	Supplying and installing following size of pre-painted M.S Cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S suspenders including bolts and nuts, painting suspenders etc as required.				
29.01	375mm width x 50mm depth x 2.0mm thickness	15	Rm		
29.02	150mm width x 50mm depth x 1.6mm thickness	10	Rm		
29.03	100mm width x 50mm depth x 1.6mm thickness	35	Rm		
	Supplying and installing following size of pre-painted M.S Cable trays bends with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S suspenders including bolts and nuts, painting suspenders etc as required.				
29.04	375mm width x 50mm depth x 2.0mm thickness	2	Each		

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29.05	150mm width x 50mm depth x 1.6mm thickness	2	Each		
29.06	100mm width x 50mm depth x 1.6mm thickness	5	Each		
	Supplying and installing following size of pre-painted M.S Cable trays reducers with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S suspenders including bolts and nuts, painting suspenders etc as required.				
29.07	150mm width x 50mm depth x 1.6mm thickness	1	Each		
29.08	100mm width x 50mm depth x 1.6mm thickness	1	Each		
30	<b>LT CABLE LAYING</b>				
	Laying of one number PVC insulated and PVC sheathed/ XLPE power cable of 1.1 KV grade of following size direct in ground including excavation and refilling of trench etc as required, but excluding sand cushioning and protective covering.				

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30.1	Upto 35sq.mm				
	Rate to be quoted for				
	Labour	160	Rm		
	Laying and fixing of one number PVC insulated and PVC sheathed/ XLPE power cable of 1.1 KV grade of following size on cable tray as required.				
30.2	Upto 35sq.mm (clamped with 1mm thick saddle)				
	Rate to be quoted for				
	Labour	20	Rm		
31	END TERMINATION				
	Supply and making end termination with brass compression gland, earth clip and aluminum lugs/ Cu lugs for following size of PVC insulated and PVC sheathed/ XLPE aluminum conductor cable of 1.1kV Grade as required.				

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31.1	4x16sq.mm Al Cable	4	Each		
31.2	4x10sq.mm Al Cable	2	Each		
31.3	4x6sq.mm Al Cable	2	Each		
32	GROUP CONTROL				

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	Supply and wiring points according to IS 732-1989 using rigid PVC conduit of minimum size 20 mm with specials conforming to IS 9537 part III 1983 and with suitable size specials conforming to IS 3419-1988, fixing the conduit using metal saddles spacing not exceeding 50 cm or concealed suitably and with 1.5 sq mm FRLS PVC insulated stranded single core copper conductor cable 650V grade, and continuous earthing with 1.5 Sq.mm green coloured FRLS PVC insulated stranded single core copper conductor cable 650V grade, generally conforming to IS 694-1990 complete with suitable size modular type metal switch boxes, modular type front plates (white or off white) etc. up to and including 6 A modular type SP switches and making good the surface of wall, colour washing etc. complete. All the terminations in the switch boards and DB's shall be tinned and the wires shall be drawn and fixed along the periphery of the box using suitable ties, tie mounts etc as required				
32.1	Two Lights controlled by one switch w/o ceiling rose	25	Each		
32.2	Three Lights controlled by one switch w/o ceiling rose	5	Each		
	<b>PART 2 - MARKET ITEMS</b>				
33	MCB				
	Supplying and fixing 40A, four pole, 415 volts, MCB in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
	Rate to be quoted for				

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	Supply	2	Each		
	Labour	2	Each		
34	S/F SP MCCB:				
	Providing and fixing following rating and breaking capacity and pole MCCB in existing cubicle panel board/DB including drilling holes in cubicle panel, making connections etc as required				
	63Amp, 25kA, FP MCCB				
	Rate to be quoted for				
	Supply	1	Each		
	Labour	1	Each		
35	S/F SURGE ARRESTORS				
	Supply of fixing of 2P+NPE Surge Arrestor - Type B+C in metal enclosure complete with all necessary interconnections etc as required.				
	Rate to be quoted for				

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	Supply	1	Each		
	Labour	1	Each		
36	Supply and fixing of IP 43 rated metallic cable end box suitable for all VTPN MCCB DBS				
	Rate to be quoted for				
	Supply	1	Each		
	Labour	1	Each		
37	LT CABLE SUPPLY				
	Supply of one number PVC insulated and PVC sheathed/ XLPE armoured power cable of 1.1 KV grade of following size as required.				
37.1	4x16sq.mm Al Cable				
	Rate to be quoted for				
	Supply	90	Rm		
37.2	4x10sq.mm Al Cable				

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	Rate to be quoted for				
	Supply	80	Rm		
37.3	4x6sq.mm Al Cable				
	Rate to be quoted for				
	Supply	10	Rm		
	Supplying & laying of following sizes of PVC insulated PVC sheathed copper conductor, three core cable in the existing surface/ recessed steel/ PVC conduit as required.				
37.4	3C x 1.5 sq. mm				
	Rate to be quoted for				
	Supply	350	Rm		
	Labour	350	Rm		
	Supplying & laying of following sizes of submersible type PVC insulated PVC sheathed copper conductor, three core cable in the existing steel/ PVC conduit as required.				
37.5	3C x 1.5 sq. mm				
	Rate to be quoted for				

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	Supply	25	Rm		
	Labour	25	Rm		
38	Supply and Fixing CAT 6 RJ 45 in the existing metal box, cover plate & accessories and giving necessary connections as required.				
	Rate to be quoted for				
	Supply	8	Each		
	Labour	8	Each		
39	COMPUTER POINTS				
	3nos 6A international sockets controlled by 1 no16A one way switch with indicator in single recessed metal box with front and inner plate etc complete in position and giving connection. (For computers)				
	Rate to be quoted for				

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	Supply	8	Each		
	Labour	8	Each		
	SUPPLY, CARRIAGE AND ERECTION OF LIGHT FITTINGS				
40	Supply, conveyance, installation, testing and commissioning of pre-wired light fittings with all accessories and lamps of all types directly on wall/ceiling and giving connections with 16/0.20 mm 3 core PVC insulated and sheathed round copper conductor flexible wire or extending the original wiring and giving connections, making good the damages, colour washing etc as required				
40.01	600 x 600 mm pre-wired fluorescent fitting/LED fitting suitable for 4x14W T5 FTL fitting, hanging, suspended from ceiling using <b>4 nos steel chain</b> (16 SWG or nearest available size) properly hooked to steel hooks anchored to the ceiling. (Philips Make Wing C Quadra (OAD) or equivalent)				
	Rate to be quoted for				
	Supply	23	Each		

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	Labour	23	Each		
40.02	Foot light/ skirt light fittings of all types directly on wall including cutting necessary holes. (Philips Make Step Light BWG150 or equivalent)				
	Rate to be quoted for				
	Supply	18	Each		
	Labour	18	Each		
40.03	Under Water (Philips Make NHG010 with LED PAR lamp or equivalent)				
	Rate to be quoted for				
	Supply	5	Each		
	Labour	5	Each		
40.04	Bollard (Philips Make Smart LED BCP 150 or equivalent)				
	Rate to be quoted for				

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	Supply	12	Each		
	Labour	12	Each		
40.05	Bush Light (Philips Make Smart LED BGP 150 or equivalent)				
	Rate to be quoted for				
	Supply	23	Each		
	Labour	23	Each		
40.06	Supply and fixing of IP67 terminal box (3 Out 1 In) with terminals with glands and metric knockouts suitable for cable entry of 3C x 1.5 sqmm PVC sheathed cable. (Hensel Make Cable Junction Boxes/gland/knockout K905/1555.25.17/8225or equivalent)				
	Rate to be quoted for				
	Supply	25	Each		

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	Labour	25	Each		
	Supply of pre-wired light fittings with all accessories and lamps of all types etc as required				
40.07	LED surface mounted downlighters (Wipro Cleanray Make Halo 8W CRDL or equivalent)				
	Rate to be quoted for				
	Supply	8	Each		
40.08	LED surface mounted downlighters (Wipro Cleanray Make Halo 13W CRDL or equivalent)				
	Rate to be quoted for				
	Supply	8	Each		
40.09	Up down light (Philips Make 23W Megapolis Cressida EWP300 IP65 or equivalent)				
	Rate to be quoted for				
	Supply	12	Each		
40.10	Ceiling Mounted T5 fitting (Philips Make 2x28W Philips TCS 150 or equivalent)				
	Rate to be quoted for				

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	Supply	12	Each		
40.11	LED Bracket (Philips Make 8W BWS150 LED or equivalent)				
	Rate to be quoted for				
	Supply	10	Each		
40.12	Downlighter (Wipro Make Halo CRDL11S013HP57 23W or equivalent)				
	Rate to be quoted for				
	Supply	12	Each		
40.13	LED Batten (Philips Make 6W 1 Ft LED Linea or equivalent)				
	Rate to be quoted for				
	Supply	2	Each		
40.14	Circular LED Downlight (Wipro Make 17W Wipro Play LED LD51 or equivalent)				
	Rate to be quoted for				

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	Supply	15	Each		
40.15	Picture Light (Philips Make BN 550 W LED 6 or equivalent)				
	Rate to be quoted for				
	Supply	7	Each		
40.16	1200mm sweep ceiling fan complete with all standard accessories excluding regulator.(Havells Make XP-390 or equivalent)				
	Rate to be quoted for				
	Supply	12	Each		
	EARTHING & LIGHTNING PROTECTION				
	EARTHING				

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<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
41	Earthing System comprises of molecularly bonded copper of 99.9% purity on low carbon steel of 3m length (1m (219 20 CU) x 3 nos), having a diameter of 20mm with copper coating thickness of 250 microns with self-coupling bore and peg arrangement (without the need for external coupler) with fault current withstand capability of 15 KA rms value for 1 second. For obtaining desired length, the number of rods shall be increased and is provided with Universal Clamp (2730 20 VA) made of SS 304 for clamping the cable/flat conductor to the rod. Impact point (219 20 IP) on the bottom rod for easy insertion. Earth enhancing mineral compound (ECS PB 12.5) is used for improving the soil conductivity. Earth enhancing mineral compound shall be so designed and constructed that in normal use their performance is reliable and without danger to persons and the surroundings. The material shall be mineral inert to sub soil and shall not pollute the environment. It shall provide a stable environment in terms of physical and chemical properties and exhibit low resistivity. It shall not be corrosive to the earth electrode itself. The material should have a resistivity less than 50 Ohm meter. It should be free from hazardous substances The mineral				
	Rate to be quoted for				
	Supply	2	nos		
	Labour	2	Each		
42	Supply and providing the following sizes of cast iron gully trap with covering at the top of the inspection chamber of earth pit as required				
	300 x 300 x 6 mm cast iron gully trap with covering				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Rate to be quoted for				
	Supply	2	Each		
	Labour	2	Each		
43	Supply and providing test joint for the earthing system using 2 Nos of the following sizes of strips including cutting and bending to shape, drilling necessary holes and fixed to the watering pipe etc as required.				
	2 x 25 x 3 mm tinned copper strip				
	Rate to be quoted for				
	Supply	2	Each		
	Labour	2	Each		
44	Supply and laying the following sizes of strips laid 0.60 m below ground level including excavating trench of suitable size and refilling etc. as required				
	25 x 3 mm Cu tinned Strip				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Supply	60	Rm		
	Labour	60	Rm		
45	Supply and drawing bare earthing conductors of the following sizes along with wiring/ cables and giving connection as required.				
45.1	2.65 mm bare copper conductor (14 SWG)				
	Rate to be quoted for				
	Supply	15	Rm		
	Labour	15	Rm		
45.2	3.15 mm bare copper conductor (10 SWG)				
	Rate to be quoted for				
	Supply	60	Rm		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Labour	60	Rm		
46	Supply of superior quality copper earth socket for the following sizes of earth conductor including crimping etc. as required.				
46.1	2.65 mm bare copper conductor (14 SWG)				
	Rate to be quoted for				
	Supply	2			
			Each		
	Labour	2			
			Each		
46.2	3.15 mm bare copper conductor (10 SWG)				
	Rate to be quoted for				
	Supply	20			
			Each		
	Labour	20			
			Each		
	LIGHTNING PROTECTION				
	Strips (Horizontal & vertical)				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
47	Supply and clamping 25x3mm Al strips on surface of wall/ parapet/ existing cable tray using clamps fabricated from 25 x 3 mm AL flat duly painted or heavy duty GI spacer saddles, spacing of clamps not exceeding 1m, making good the damages, colour washing etc. as required (for Horizontal run)				
	Rate to be quoted for				
	Supply	300	Each		
	Labour	300	Each		
48	Supply and clamping 25x3mm Al strips on surface of wall/ parapet/ existing cable tray using clamps fabricated from 25 x 3 mm AL flat duly painted or heavy duty GI spacer saddles, spacing of clamps not exceeding 1m, making good the damages, colour washing etc. as required (for vertical run)				
	Rate to be quoted for				
	Supply	40	Rm		
	Labour	40	Rm		
	Riveting				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
49	Riveting , sweating and soldering of one GI/ aluminium/ copper tape with another GI/ aluminium/ copper tape using 2 nos. 6mm dia. GI bolt and nut/ rivets including drilling holes, tinning etc. as required.				
	Rate to be quoted for				
	Supply	60	Each		
	Labour	60	Each		
50	Supplying, threading, laying, jointing & clamping of the following sizes of PVC pipe (8 Kgf/ cm <sup>2</sup> ) with all required accessories and clamp including cutting and making good the walls, colour washing etc. on surface of wall / parapet etc. as required				
	32 mm dia				
	Rate to be quoted for				
	Supply	6	Rm		
	Labour	6	Rm		
	Testing Joint (Down Conductors)				
51	Supply and providing test joint for the earthing system using 2 Nos of the following sizes of strips including cutting and bending to shape, drilling necessary holes and fixed to the watering pipe etc as required. (for electrode)				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	2 x 25 x 3 mm tinned copper strip				
	Rate to be quoted for				
	Supply	4	Each		
	Labour	4	Each		
52	Supply and installation of 300x150x75mm metal box neatly painted over a coating of red oxide primer with clamps for connecting down conductor and earth lead with 150mm overlap and 150mm long lead pieces in between and jointing bolts and nuts including all accessories etc as required.				
	Rate to be quoted for				
	Supply	4	Each		
	Labour	4	Each		
	Supply and providing the following sizes of cast iron gully trap with covering at the top of the inspection chamber of earth pit as required				
53	300 x 300 x 6 mm cast iron gully trap with covering				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

<b>PART I - ENTRANCE PLAZA</b>					
	<b>PART I B - ELECTRICAL WORKS</b>				
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Supply	4	Each		
	Labour	4	Each		
54	Earthing System comprises of molecularly bonded copper of 99.9% purity on low carbon steel of 3m length (1m (219 20 CU) x 3 nos), having a diameter of 20mm with copper coating thickness of 250 microns with self-coupling bore and peg arrangement (without the need for external coupler) with fault current withstand capability of 15 KA rms value for 1 second. For obtaining desired length, the number of rods shall be increased and is provided with Universal Clamp (2730 20 VA) made of SS 304 for clamping the cable/flat conductor to the rod. Impact point (219 20 IP) on the bottom rod for easy insertion. Earth enhancing mineral compound (ECS PB 12.5) is used for improving the soil conductivity. Earth enhancing mineral compound shall be so designed and constructed that in normal use their performance is reliable and without danger to persons and the surroundings. The material shall be mineral inert to sub soil and shall not pollute the environment. It shall provide a stable environment in terms of physical and chemical properties and exhibit low resistivity. It shall not be corrosive to the earth electrode itself. The material should have a resistivity less than 50 Ohm meter. It should be free from hazardous substances The mineral				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Supply	4	nos		
	Labour	4	Each		
55	Supply & fixing of 9U network rack with adequate number of cable manager, power strip (5Ax5nos) and hardware packets complete with all necessary accessories etc as required				
	Rate to be quoted for				
	Supply	1	Each		
	Labour	1	Each		
56	Supply and fixing of 20 pair PVC Krone box IP 54 rated complete for connection and branching points for telecommunication cables with all accessories etc as required.				
	Rate to be quoted for				
	Supply	1	Each		

**PART I - ENTRANCE PLAZA**

	<b>PART I B - ELECTRICAL WORKS</b>				
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
	Labour	1	Each		
	<b>PART II - AMPHI THEATRE</b>				
	<b>PART II B - ELECTRICAL WORKS</b>				
	Rates of only ISI marked conduits, cables, switches and socket outlets were taken in the following items. Unless and otherwise specified, only such conduits, cables, switches and socket outlets shall be used in the work.				
I	PART 1 - CPWD				
1	Point wiring in PVC conduit, with modular type switch.				
	Wiring for light point/ fan point/ exhaust fan point/ call bell pointwith 1.5 sq.mm FRLS PVC insulated copper conductor singlecore cable in surface / recessed medium class PVC conduit,with modular switch, modular plate, suitable GI box and earthingthe point with 1.5 sq.mm. FRLS PVC insulated copper conductorsingle core cable etc as required.				
	Group C	21	Point		
2	Twin control point wiring in PVC conduit, with modular type switch:				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Wiring for twin control light point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, 2 way modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FRLSPVC insulated copper conductor single core cable etc as required.	1	Point		
3	Wiring for circuit/ sub main:				
	Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required.				
3.1	2x1.5 sq.mm + 1x1.5sqmm earth wire	160	Rm		
3.2	2x2.5 sq.mm + 1x2.5sqmm earth wire	150	Rm		
3.3	2x4 sq.mm + 1x4sqmm earth wire	20	Rm		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
3.4	4x6 sq.mm + 2x4sqmm earth wire	20	Rm		
3.5	4x10 sq.mm + 2x6sqmm earth wire	10	Rm		
4	Telephone wiring in existing conduit:				
	Supplying and drawing following pair 0.5 mm dia FRLS PVC insulated annealed copper conductor, unarmored telephone cable in the existing surface/ recessed steel/ PVC conduit as required				
	2 Pair	30	Rm		
5	TV cable in existing conduit:				
	Supplying and drawing co-axial TV cable RG-6 grade, 0.7 mmsolid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ recessed steel/ PVC conduit as required.	30	Rm		
6	PVC conduit:				
	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cuttingthe wall and making good the same in case of recessed conduit as required.				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
6.1	20mm	200	Rm		
6.2	25mm	550	Rm		
6.3	32mm	42	Rm		
7	Modular type switch /socket:				
	Supplying and fixing following modular switch/socket on the existing modular plate & switch box including connections but excluding modular plate etc as required.				
7.1	5/6 amps switch	30	Each		
7.2	2 way 5/6 amps switch	1	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
7.3	Telephone socket outlet	1	Each		
7.4	TV antenna socket outlet	1	Each		
7.5	Bell push	1	Each		
8	Modular type electronic fan regulator:				
	Supplying and fixing stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc as required.	1	Each		
9	Modular type blanking plate:				
	Supplying and fixing modular blanking plate on the existing modular plate as required.	2	Each		
	Modular boxes, base & cover plate:				
10	Supplying and fixing following size/modules, GI box along with modular base & cover plate for modular switches in recess etc as required				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
10.1	1 or 2 Module (75mm x 75mm)	7	Each		
10.2	3 Module (100mm x 75mm)	2	Each		
10.3	8 module (125mm x 125mm)	4	Each		
11	S/F 6A & 16A socket with switch				
11.1	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3pin 5/6 amps modular socket outlet and 5/6 amps modular switch, connection etc as required.	6	Each		
11.2	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6pin 15/16 amps modular socket outlet and 15/16 amps modular switch, connection etc as required.	4	Each		
12	Ceiling rose:				
	Supplying and fixing 3 pin, 5amps, ceiling rose on the existing junction box\ wooden block including connection etc as required.	5	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
13	Erection of Wall/ceiling light fittings:				
	Erection of wall bracket/ ceiling fittings/ LED fittings of all sizes and shapes containing LED lamps per fitting, complete with all accessories including connection etc. as required.	12	Each		
14	ITC flourescent fitting directly on surface:				
	Installation, testing and commissioning of pre-wired, fluorescent fitting/ compact fluorescent fitting/ LED fitting of all types, complete with all accessories and tube etc directly on ceiling/ wall, including connection with 1.5 sq.mm FR PVC insulated, copper conductor, single core cable and earthing etc. as required.	4	Each		
15	ITC ceiling fan:				
	Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (up to 30cm) with 1.5 sq.mm FR PVC Insulated, copper conductor, single core cable etc as required.	1	Each		
16	Numbering of fan/fittings:				
	Numbering of ceiling fan/exhaust fan/flourscent fitting as required.	5	Each		
17	ITC exhaust fan upto 450mm sweep:				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Installation of exhaust fan up to 450mm sweep in the existing opening, including making in the hole to suit the size of the above fan,making good the damage,connection, testing, commisioning etc as required.	4	Each		
18	Supply & Fixing louvers/shutters for exhaust fan:				
	Extra for fixing the louvers/shutters complete with frame for a exhaust fan of all sizes.	4	Each		
19	Supply & Drawing UTP cable:				
	Supplying and drawing of UTP 4 pair CAT 6 LAN cable in the existing surface/ recessed steel/ PVC conduit as required.	100	Rm		
20	S/F TP MCCB DB:				
	Supplying and fixing following ways, surface/recess mounting, vertical type, 415 volts, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200A tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCB's with provision for 100A TP 25kA MCCB as incomer, interconnection between incomer MCCB and busbars (but without MCCB/MCB) as required				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	8 way (8 + 24), Double door	1	Each		
21	S/F TP MCB DB:				
	Supplying and fixing following ways, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 volts, on surface/ recess, complete with tinned copper bus bar, neutral bubar, earth bar, din bar, detachable gland plate, interconnections, phosphatised and powder painted including earthing etc. as required(But without MCB/RCCB/Isolator)				
21.1	4 way (8 + 12), Double door	1	Each		
21.2	6 way (8 + 18), Double door	2	Each		
22	S/F SP MCB DB:				
	Supplying and fixing following ways, horizontal type single pole and neutral, sheet steel, MCB distribution board, 240 volts, on surface/ recess, complete with tinned copper bus bar, neutral bubar, earth bar, din bar, detachable gland plate, interconnections, phosphatised and powder painted including earthing etc. as required(But without MCB/RCCB/Isolator)				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	8 way (4 + 8), Double door	1	Each		
23	MCB's				
	C' series, SP MCB:				
	Supplying and fixing 5 amps to 32 amps rating, 240 Volts, 'C' curve, miniature circuit breaker suitable for inductive and other loads of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
23.1	Single pole	57	Each		
23.2	Triple pole	4	Each		
24	MCB ISOLATORS				
	Supplying and fixing following rating, double pole, 240 volts, isolators in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
24.1	32A	1	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Supplying and fixing following rating, four pole, 415 volts, isolators in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
24.2	32A	2	Each		
24.3	40A	1	Each		
25	Providing and fixing MV danger notice plate of 200mmx150mm, made of mild steel, atleast 2mm thick, and vitreous enameled white on both sides, and with inscription in single red colour on front side as required.	1	Each		
26	RCCB				
	Supplying, fixing, testing and commissioning double pole, 240 volts, residual current circuit breaker RCCB of the following rating and sensitivity current in the existing MCB DB complete with connections, etc. as required.				

**PART I - ENTRANCE PLAZA**

<b>PART I - ENTRANCE PLAZA</b>					
	<b>PART I B - ELECTRICAL WORKS</b>				
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
26.1	25A 30mA DP RCCB	1	Each		
	Supplying, fixing, testing and commissioning four pole, 415 volts, residual current circuit breaker RCCB of the following rating and sensitivity current in the existing MCB DB complete with connections, etc. as required.				
26.2	40A 100mA FP RCCB	1	Each		
26.3	25A 30mA FP RCCB	2	Each		
27	ENCLOSURES				
	Supplying and fixing DP sheet steel enclosure on surface/ recess along with 25/32amps 240 volts "C" curve DP MCB/ MCB Isolator complete with connections, testing and commissioning etc. as required.	1	Each		
	LIGHTNING PROTECTION				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
27	Providing and laying G.I. tape 32 mm x 6 mm from earth electrode directly in ground as required.	65	Rm		
	<b>MISCELLANEOUS</b>				
28	Supplying and embedding 32mm dia GI pipe (medium class) in pole collar/ foundation (during casting) for cable entry including bending the pipe to the required shape complete as required. (for mounting outdoor lights)	7	Rm		
29	Providing, laying and fixing following dia GI pipe (medium class) in ground complete with GI fittings including trenching (75cm deep) and refilling as required.				
	100 mm dia	160	Rm		
30	<b>LT CABLE LAYING</b>				
	Laying and fixing of one number PVC insulated and PVC sheathed/ XLPE power cable of 1.1 KV grade of following size on wall surface as required.				
	Upto 35sqmm (clamped with 1mm thick saddle)				
	Rate to be quoted for				

## PART I - ENTRANCE PLAZA

PART I - ENTRANCE PLAZA					
	PART I B - ELECTRICAL WORKS				
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
	Labour	15	Rm		
31	END TERMINATION				
	Supply and making end termination with brass compression gland, earth clip and aluminum lugs/ Cu lugs for following size of PVC insulated and PVC sheathed/ XLPE aluminum conductor cable of 1.1kV Grade as required.				
	3.5x35sq.mm Al Cable	2	Each		
	PART 2 - MARKET ITEMS				
	POWER DISTRIBUTION PANELS				
32	Supply, Installation, testing and commissioning of cubicle type, dust and vermin proof, wall mounted, front operated MV panel board made out of 14 SWG thick CRCA sheet, powder coated after 7 tank process, fully compartmentalised complete with hinges and earthed front doors with name plate, danger notice board, heavy duty rubber gaskets, removable gland plates made out of 3mm thick sheet steel with all necessary meters, indications, CTs etc as shown in the electrical drawing or as per the latest Electrical Inspectorate requirement complete with all connections and interconnections for the following panels.				
	Special Note:				
	All breaker releases shall be set as per the ratings shown in the drawings				

## PART I - ENTRANCE PLAZA

PART I B - ELECTRICAL WORKS					
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
	Bus bar sizes shall be taken either as shown in the drawing or as design parameter of 0.8A/Sqmm for AL and 1.2A/Sqmm for Cu which ever is higher.				
	Cable Chamber shall be provided for incoming & outgoing cables or as required				
	All SDFs and SDUs mentioned shall be 415V, 50Hz AC23 A duty type				
	Earth bus shall be full length of the panel and all Switches/breakers shall be double earthed				
	GA drawings for all the panels before manufacturing shall submit to the Electrical Consultants to get approval before manufacturing.				
	The board shall confirm IS 8623 standards.				
32.1	SUB PANEL				
	Incomer				
	315A, TPN Isolator - 1 no				
	Single Phase Digital Ammeters (0-300)A - 3 nos				
	CT 300/5A CL:1 15VA - 3 nos				
	Three Phase Voltmeter (0-500)V - 1 no				

**PART I - ENTRANCE PLAZA**

<b>PART I - ENTRANCE PLAZA</b>					
	<b>PART I B - ELECTRICAL WORKS</b>				
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Voltmeter Selector Switch - 1 no				
	Outgoings				
	200A 35kA TP MCCB - 1 no				
	63A 35kA TP MCCB - 2 no				
	Busbar				
	300Amps uniformly rated, continuous duty, 415Volts A/C, 3 phase and neutral Aluminium busbar with colour coded heat shrink sleeves supported on SMC type grip supports 35kA.				
	Accessories as per schematic drawing.				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Supply	1	Each		
	Labour	1	Each		
33	MINIATURE CIRCUIT BREAKERS ('C' SERIES)				
	Supplying and fixing 'C' series, miniature circuit breaker suitable for lighting and other loads of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
	40A TP MCB				
	Rate to be quoted for				
	Supply	3	Each		
	Labour	3	Each		
34	S/F SP MCCB:				
	Providing and fixing following rating and breaking capacity and pole MCCB in existing cubicle panel board/DB including drilling holes in cubicle panel, making connections etc as required				
	63Amp, 16kA, FP MCCB				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

PART I B - ELECTRICAL WORKS					
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
	Supply	1	Each		
	Labour	1	Each		
35	S/F SURGE ARRESTORS				
	Supply of fixing of 2P+NPE Surge Arrestor - Type B+C in metal enclosure complete with all necessary interconnections etc as required.				
	Rate to be quoted for				
	Supply	1	Each		
	Labour	1	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
36	Construction of cable inspection chamber of size 1.2m x 1m x 1m with brick wall on four sides (23cm) in 1:6 cement mortar and 12mm thick plastering with 1:4 cement mortar and providing re-inforced RCC slab of 75mm thick with lifting holes in position.	3	Each		
37	Supply and Fixing CAT 6 RJ 45 in the existing with box, cover plate & accessories and giving necessary connections as required.				
	Rate to be quoted for				
	Supply	3	Each		
	Labour	3	Each		
38	COMPUTER POINTS				
	3nos 6A international sockets controlled by 1 no 16A one way switch with indicator in single recessed metal box with front and inner plate etc complete in position and giving connection. (For computers)				
	Rate to be quoted for				
	Supply	3	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Labour	3	Each		
39	<b>LT CABLE SUPPLY</b>				
	Supply of one number PVC insulated and PVC sheathed/ XLPE armoured power cable of 1.1 KV grade of following size as required.				
	3.5x35sq.mm Al Cable				
	Supply	15	Rm		
	<b>SUPPLY, CARRIAGE AND ERECTION OF LIGHT FITTINGS</b>				
40	Supply, conveyance, installation, testing and commissioning of pre-wired light fittings with all accessories and lamps of all types directly on wall/ceiling and giving connections with 16/0.20 mm 3 core PVC insulated and sheathed round copper conductor flexible wire or extending the original wiring and giving connections, making good the damages, colour washing etc as required				
40.01	Foot light/ skirt light fittings of all types directly on wall including cutting necessary holes. (Philips Make BWG150 or equivalent)				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

PART I B - ELECTRICAL WORKS					
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
	Supply	48	Each		
	Labour	48	Each		
40.02	LED focus light (Philips Make Spot Light MRS501 C lxCDMT 70W EB 12 I C WH or equivalent)				
	Rate to be quoted for				
	Supply	10	Each		
	Labour	10	Each		
40.03	Outdoor light (Wipro Make Orio LR01 25W LED)				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Supply	7	Each		
	Labour	7	Each		
40.04	LED strip lights of 7.2W/m (Hafele Make 83.73.400 or equivalent) length with all accessories inside cove/roof structure				
	Rate to be quoted for				
	Supply	90	Rm		
	Labour	90	Rm		
40.05	Driver 120W (Hafele Make 83.35.05301 or equivalent) with all accessories inside cove/roof structure				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Rate to be quoted for				
	Supply	6	Each		
	Labour	6	Each		
40.06	Supply and fixing of wall mounted type IP 66 rated thermoplastic box (260mm x 210mm x 117mm) for mounting drivers with all necessary interconnections etc as required. (Hensel Make KF PV 0600)				
	Rate to be quoted for				
	Supply	6	Each		
	Labour	6	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
40.07	Suspended/ surface mounted luminaire (Wipro Make Quad LED LH01 with all accessories on roof structure)				
	Rate to be quoted for				
	Labour	27	Each		
	Supply of pre-wired light fittings with all accessories and lamps of all types etc as required				
40.08	LED suspended/ surface mounted downlighters (Wipro Make Clean Ray Halo CRDL11S013HP57 13W or equivalent)				
	Rate to be quoted for				
	Supply	6	Each		
40.09	LED surface mounted downlighters (Wipro Make Clean Ray Halo CRDL11S008HP57 8W or equivalent)				
	Rate to be quoted for				
	Supply	4	Each		
40.10	LED Tube (Wipro Make 24W Trim LED LL20 or equivalent)				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Supply	2	Each		
40.11	LED Batten (Philips Make 6W 1Ft BN 550 WLED6 Linea or equivalent)				
	Rate to be quoted for				
	Supply	2	Each		
40.12	LED Bracket (Philips Make 15W LED BW5161 or equivalent)				
	Rate to be quoted for				
	Supply	2	Each		
40.13	1200mm sweep ceiling fan complete with all standard accessories excluding regulator.(Havells Make XP-390 or equivalent)				
	Rate to be quoted for				
	Supply	1	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
40.14	Exhaust fans of size 150mm in the existing opening, fixing necessary bolts and nuts, making good the damages etc. as required (Havells Make Ventil Air DS or equivalent)				
	Rate to be quoted for				
	Supply	4	Each		
41	LT CABLE SUPPLY				
	Supplying & laying of following sizes of PVC insulated PVC sheathed copper conductor, three core cable in the existing surface/ recessed steel/ PVC conduit as required.				
41.1	3C x 1.5 sq. mm				
	Rate to be quoted for				
	Supply	500	Rm		
	Labour	500	Rm		
41.2	3C x 2.5 sq. mm				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Supply	450	Rm		
	Labour	450	Rm		
	<b>EARTHING &amp; LIGHTNING PROTECTION</b>				
	<b>EARTHING</b>				
42	<p>Earthing System comprises of molecularly bonded copper of 99.9% purity on low carbon steel of 3m length (1m (219 20 CU) x 3 nos), having a diameter of 20mm with copper coating thickness of 250 microns with self-coupling bore and peg arrangement (without the need for external coupler) with fault current withstand capability of 15 KA rms value for 1 second. For obtaining desired length, the number of rods shall be increased and is provided with Universal Clamp (2730 20 VA) made of SS 304 for clamping the cable/flat conductor to the rod. Impact point (219 20 IP) on the bottom rod for easy insertion. Earth enhancing mineral compound (ECS PB 12.5) is used for improving the soil conductivity. Earth enhancing mineral compound shall be so designed and constructed that in normal use their performance is reliable and without danger to persons and the surroundings. The material shall be mineral inert to sub soil and shall not pollute the environment. It shall provide a stable environment in terms of physical and chemical properties and exhibit low resistivity. It shall not be corrosive to the earth electrode itself. The</p>				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Supply	2	Each		
	Labour	2	Each		
43	Supply and providing the following sizes of cast iron gully trap with covering at the top of the inspection chamber of earth pit as required				
	300 x 300 x 6 mm cast iron gully trap with covering				
	Rate to be quoted for				
	Supply	2	Each		
	Labour	2	Each		
44	Supply and providing test joint for the earthing system using 2 Nos of the following sizes of strips including cutting and bending to shape, drilling necessary holes and fixed to the watering pipe etc as required.				
	2 x 25 x 3 mm tinned copper strip				
	Rate to be quoted for				
	Supply	2	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Labour	2	Each		
45	Supply and laying the following sizes of strips laid 0.60 m below ground level including excavating trench of suitable size and refilling etc. as required.				
	25 x 3 mm Cu tinned Strip				
	Rate to be quoted for				
	Supply	50	Rm		
	Labour	50	Rm		
46	Supply and drawing bare earthing conductors of the following sizes along with wiring/ cables and giving connection as required.				
46.1	2.65 mm bare copper conductor (14 SWG)				
	Rate to be quoted for				
	Supply	15	Rm		
	Labour	15	Rm		
46.2	3.15 mm bare copper conductor (10 SWG)				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Rate to be quoted for				
	Supply	30	Rm		
	Labour	30	Rm		
47	Supply of superior quality copper earth socket for the following sizes of earth conductor including crimping etc. as required.				
47.1	2.65 mm bare copper conductor (14 SWG)				
	Rate to be quoted for				
	Supply	2	Each		
	Labour	2	Each		
47.2	3.15 mm bare copper conductor (10 SWG)				
	Rate to be quoted for				
	Supply	12	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Labour	12	Each		
	<b>LIGHTNING PROTECTION</b>				
	Strips (Horizontal & vertical)				
48	Supply and clamping 25x3mm Al strips on surface of wall/ parapet/ existing cable tray using clamps fabricated from 25 x 3 mm Al flat duly painted or heavy duty GI spacer saddles, spacing of clamps not exceeding 1m, making good the damages, colour washing etc. as required (for Horizontal run)				
	Rate to be quoted for				
	Supply	175	Rm		
	Labour	175	Rm		
49	Supply and clamping 25x3mm Al strips on surface of wall/ parapet/ existing cable tray using clamps fabricated from 25 x 3 mm AL flat duly painted or heavy duty GI spacer saddles, spacing of clamps not exceeding 1m, making good the damages, colour washing etc. as required (for vertical run)				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

PART I - ENTRANCE PLAZA					
	PART I B - ELECTRICAL WORKS				
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
	Supply	30	Rm		
	Labour	30	Rm		
	Riveting				
50	Riveting , sweating and soldering of one GI/ aluminium/ copper tape with another GI/ aluminium/ 25x3mm copper tape using 2 nos. 6mm dia. GI bolt and nut/ rivets including drilling holes, tinning etc. as required.				
	Rate to be quoted for				
	Supply	80	Each		
	Labour	80	Each		
51	Supplying, threading, laying, jointing & clamping of the following sizes of PVC pipe (8 Kgf/ cm <sup>2</sup> ) with all required accessories and clamp including cutting and making good the walls, colour washing etc. on surface of wall / parapet etc. as required.				
	32 mm dia				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

<b>PART I - ENTRANCE PLAZA</b>					
	<b>PART I B - ELECTRICAL WORKS</b>				
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Supply	10	Rm		
	Labour	10	Rm		
	Testing Joint (Down Conductors)				
52	Supply and providing test joint for the earthing system using 2 Nos of the following sizes of strips including cutting and bending to shape, drilling necessary holes and fixed to the watering pipe etc as required. (for electrode)				
	2 x 25 x 3 mm tinned copper strip				
	Rate to be quoted for				
	Supply	3	Each		
	Labour	3	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
53	Supply and installation of 300x150x75mm metal box neatly painted over a coating of red oxide primer with clamps for connecting down conductor and earth lead with 150mm overlap and 150mm long lead pieces in between and jointing bolts and nuts including all accessories etc as required.				
	Rate to be quoted for				
	Supply	3	Each		
	Labour	3	Each		
	Supply and providing the following sizes of cast iron gully trap with covering at the top of the inspection chamber of earth pit as required				
54	300 x 300 x 6 mm cast iron gully trap with covering				
	Rate to be quoted for				
	Supply	3	Each		
	Labour	3	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
55	Earthing System comprises of molecularly bonded copper of 99.9% purity on low carbon steel of 3m length (1m (219 20 CU) x 3 nos), having a diameter of 20mm with copper coating thickness of 250 microns with self-coupling bore and peg arrangement (without the need for external coupler) with fault current withstand capability of 15 KA rms value for 1 second. For obtaining desired length, the number of rods shall be increased and is provided with Universal Clamp (2730 20 VA) made of SS 304 for clamping the cable/flat conductor to the rod. Impact point (219 20 IP) on the bottom rod for easy insertion. Earth enhancing mineral compound (ECS PB 12.5) is used for improving the soil conductivity. Earth enhancing mineral compound shall be so designed and constructed that in normal use their performance is reliable and without danger to persons and the surroundings. The material shall be mineral inert to sub soil and shall not pollute the environment. It shall provide a stable environment in terms of physical and chemical properties and exhibit low resistivity. It shall not be corrosive to the earth electrode itself. The				
	Rate to be quoted for				
	Supply	3	Each		
	Labour	3	Each		
56	Supply and providing 6 mm thick 2m x 1m wide electrical grade chequered type rubber mat to withstand 3.3 KV dielectric strength conforming to IS 5429/ 1969.	2	Sqm		
57	Supply & fixing of 9U network rack with adequate number of cable manager, power strip (5Ax5nos) and hardware packets complete with all necessary accessories etc as required				

**PART I - ENTRANCE PLAZA**

	<b>PART I B - ELECTRICAL WORKS</b>				
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
	Rate to be quoted for				
	Supply	1	Each		
	Labour	1	Each		
58	Supply of fixing of 10 pair Krone box with all accessories etc as required.				
	Rate to be quoted for				
	Supply	1	Each		
	Labour	1	Each		
	<b>PART III - MOTION SIMULATOR</b>				
	<b>PART III B - ELECTRICAL WORKS</b>				
	Rates of only ISI marked conduits, cables, switches and socket outlets were taken in the following items. Unless and otherwise specified, only such conduits, cables, switches and socket outlets shall be used in the work.				
I	PART 1 - CPWD				

## PART I - ENTRANCE PLAZA

PART I B - ELECTRICAL WORKS					
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
1	Point wiring in PVC conduit, with modular type switch.				
	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor singlecore cable in surface / recessed medium class PVC conduit, with modular switch, modular plate, suitable GI box and earthingthe point with 1.5 sq.mm. FRLS PVC insulated copper conductorsingle core cable etc as required.				
	Group C	69	Point		
2	Twin control point wiring in PVC conduit, with modular type switch:				
	Wiring for twin control light point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessedmedium class PVC conduit, 2 way modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc as required.	1	Point		
3	Wiring for circuit/ sub main:				
	Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required.				
3.1	2x1.5 sq.mm + 1x1.5sqmm earth wire	350	Rm		

## PART I - ENTRANCE PLAZA

PART I B - ELECTRICAL WORKS					
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
3.2	2x2.5 sq.mm + 1x2.5sqmm earth wire	260	Rm		
3.3	2x4 sq.mm + 1x4sqmm earth wire	30	Rm		
4	Telephone wiring in existing conduit:				
	Supplying and drawing following pair 0.5 mm dia FRLS PVC insulated annealed copper conductor, unarmored telephone cable in the existing surface/ recessed steel/ PVC conduit as required				
	2 Pair	30	Rm		
5	TV cable in existing conduit:				
	Supplying and drawing co-axial TV cable RG-6 grade, 0.7 mmsolid copper conductor PE insulated, shielded with fine tinnedcopper braid and protected with PVC sheath in the existingsurface/ recessed steel/ PVC conduit as required.	40	Rm		
6	PVC conduit:				
	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cuttingthe wall and making good the same in case of recessed conduitas required.				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
6.1	20mm	75	Rm		
6.2	25mm	210	Rm		
6.3	32mm	20	Rm		
7	Modular type switch /socket:				
	Supplying and fixing following modular switch/socket on the existing modular plate & switch box including connections but excluding modular plate etc as required.				
7.1	2 way 5/6 amps switch	1	Each		
7.2	Telephone socket outlet	1	Each		

## PART I - ENTRANCE PLAZA

PART I B - ELECTRICAL WORKS					
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
7.3	TV antenna socket outlet	1	Each		
8	Modular type electronic fan regulator:				
	Supplying and fixing stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc as required.	6	Each		
9	Modular type blanking plate:				
	Supplying and fixing modular blanking plate on the existing modular plate as required.	2	Each		
9.1	Modular boxes, base & cover plate:				
	Supplying and fixing following size/modules, GI box along with modular base & cover plate for modular switches in recess etc as required				
9.2	1 or 2 Module (75mm x 75mm)	13	Each		
10	S/F 6A & 16A socket with switch				
10.1	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3pin 5/6 amps modular socket outlet and 5/6 amps modular switch, connection etc as required.	6	Each		

## PART I - ENTRANCE PLAZA

PART I B - ELECTRICAL WORKS					
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
10.2	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6pin 15/16 amps modular socket outlet and 15/16 amps modular switch, connection etc as required.	12	Each		
11	Ceiling rose:				
	Supplying and fixing 3 pin, 5amps, ceiling rose on the existing junction box\ wooden block including connection etc as required.	6	Each		
12	Erection of Wall/ceiling/ LED light fittings:				
	Erection of wall bracket/ ceiling fittings/ LED fittings of all sizes and shapes containing LED per fitting, complete with all accessories including connection etc. as required.	20	Each		
13	ITC flourescent/ LED fitting directly on surface:				
	Installation, testing and commissioning of pre-wired, fluorescent fitting/ compact fluorescent fitting/ LED fitting of all types, complete with all accessories and tube/LED etc directly on ceiling/ wall, including connection with 1.5 sq.mm FR PVC insulated, copper conductor, single core cable and earthing etc. as required.	7	Each		
14	ITC ceiling fan:				
	Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (up to 30cm)with 1.5 sq.mm FR PVC Insulated, copper conductor, single core cable etc as required.	6	Each		
15	Numbering of fan/fittings:				

## PART I - ENTRANCE PLAZA

PART I B - ELECTRICAL WORKS					
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
	Numbering of ceiling fan/exhaust fan/flourscent fitting as required.	6	Each		
16	Supply & Drawing UTP cable:				
	Supplying and drawing of UTP 4 pair CAT 6 LAN cable in the existing surface/ recessed steel/ PVC conduit as required.	200	Rm		
17	S/F TP MCB DB:				
	Supplying and fixing following ways, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 volts, on surface/ recess, complete with tinned copper bus bar, neutral bubar, earth bar, din bar, detachable gland plate, interconnections, phosphatised and powder painted including earthing etc. as required(But without MCB/RCCB/Isolator)				
17.1	4 way (8 + 12), Double door	1	Each		
17.2	8 way (8 + 24), Double door	1	Each		
18	S/F SP MCB DB:				

## PART I - ENTRANCE PLAZA

PART I - ENTRANCE PLAZA					
PART I B - ELECTRICAL WORKS					
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
	Supplying and fixing following ways, horizontal type single pole and neutral, sheet steel, MCB distribution board, 240 volts, on surface/ recess, complete with tinned copper bus bar, neutral bubar, earth bar, din bar, detachable gland plate, interconnections, phosphatised and powder painted including earthing etc. as required(But without MCB/RCCB/Isolator)				
	8 way (4 + 8), Double door	1	Each		
19	MCB's				
	'C' series, SP MCB:				
	Supplying and fixing 5 amps to 32 amps rating, 240 Volts, 'C' curve, miniature circuit breaker suitable for inductive and other loads of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
	Single pole	44	Each		
20	MCB ISOLATORS				
	Supplying and fixing following rating, double pole, 240 volts, isolators in the existing MCB DB/ enclosure complete with connections, testing and commissioning etc. as required.				
20.1	32A	1	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Supplying and fixing following rating, four pole, 415 volts, isolators in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
20.2	32A	1	Each		
20.3	40A	1	Each		
21	RCCB				
	Supplying, fixing, testing and commissioning double pole, 240 volts, residual current circuit breaker RCCB of the following rating and sensitivity current in the existing MCB DB complete with connections, etc. as required.				
21.1	25A 30mA DP RCCB	1	Each		
	Supplying, fixing, testing and commissioning four pole, 415 volts, residual current circuit breaker RCCB of the following rating and sensitivity current in the existing MCB DB complete with connections, etc. as required.				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
21.2	40A 100mA FP RCCB	1	Each		
21.3	25A 30mA FP RCCB	1	Each		
22	ENCLOSURES				
	Supplying and fixing DP sheet steel enclosure on surface/ recess along with 25/32 amps 240 volts "C" curve DP MCB Isolator complete with connections, testing and commissioning etc. as required.	1	Each		
	MISCELLANEOUS				
23	Supplying and fixing 20 amps, 240 volts, SPN industrial type, socket outlet, with 2 pole and earth, metal enclosed plug top along with 20 amps C curve, SP, MCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket outlet and complete with connections, testing and commissioning etc. as required.	2	Each		
24	Providing and fixing MV danger notice plate of 200mmx150mm, made of mild steel, atleast 2mm thick, and vitreous enameled white on both sides, and with inscription in single red colour on front side as required.	1	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
25	Providing and laying G.I. tape 32 mm X 6 mm from earth electrode directly in ground as required.	25	Rm		
26	<b>CABLE TRAYS</b>				
	Supplying and installing following size of pre-painted M.S Cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S suspenders including bolts and nuts, painting suspenders etc as required.				
26.1	150mm width x 50mm depth x 1.6mm thickness	15	Rm		
26	<b>LT CABLE LAYING</b>				
	Laying and fixing of one number PVC insulated and PVC sheathed/ XLPE power cable of 1.1 KV grade of following size on cable tray as required.				
26.1	Above 35sqmm and upto 95sq.mm (clamped with 25x3mm MS flat clamp)				
	Rate to be quoted for				
	Labour	60	Rm		
26.2	Upto 35sq.mm (clamped with 1mm thick saddle)				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

PART I B - ELECTRICAL WORKS					
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
	Labour	75	Rm		
27	END TERMINATION				
	Supply and making end termination with brass compression gland, earth clip and aluminum lugs/ Cu lugs for following size of PVC insulated and PVC sheathed/ XLPE aluminum conductor cable of 1.1kV Grade as required.				
27.1	3.5cx50sq.mm Al Cable	4	Rm		
27.2	3.5cx35sq.mm Al Cable	4	Each		
27.3	4x16sq.mm Al Cable	2	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I - ENTRANCE PLAZA</b>					
	<b>PART I B - ELECTRICAL WORKS</b>				
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
27.4	4x6sq.mm Al Cable	2	Each		
28	GROUP CONTROL				
	Supply and wiring points according to IS 732-1989 using rigid PVC conduit of minimum size 20 mm with specials conforming to IS 9537 part III 1983 and with suitable size specials conforming to IS 3419-1988, fixing the conduit using metal saddles spacing not exceeding 50 cm or concealed suitably and with 1.5 sq mm FRLS PVC insulated stranded single core copper conductor cable 650V grade, and continuous earthing with 1.5 Sq.mm green coloured FRLS PVC insulated stranded single core copper conductor cable 650V grade, generally conforming to IS 694-1990 complete with suitable size modular type metal switch boxes, modular type front plates (white or off white) etc. up to and including 6 A modular type SP switches and making good the surface of wall, colour washing etc. complete. All the terminations in the switch boards and DB's shall be tinned and the wires shall be drawn and fixed along the periphery of the box using suitable ties, tie mounts etc as required				
28.1	Three Lights controlled by one switch w/o ceiling rose	5	Each		

## PART I - ENTRANCE PLAZA

PART I - ENTRANCE PLAZA					
	PART I B - ELECTRICAL WORKS				
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
28.2	Five Lights controlled by one switch w/o ceiling rose	8	Each		
	PART 2 - MARKET ITEMS				
	POWER DISTRIBUTION PANELS				
29	Supply, installation, testing and commissioning of cubicle type, dust and vermin proof, wall/floor mounted, front operated MV panel board made out of 14 SWG thick CRCA sheet, powder coated after 7 tank process, fully compartmentalised complete with hinges and earthed front doors with name plate, danger notice board, heavy duty rubber gaskets, removable gland plates made out of 3mm thick sheet steel with all necessary meters, indications, CTs etc as shown in the electrical drawing or as per the latest Electrical Inspectorate requirement complete with all connections and interconnections for the following panels.				
	Special Note:				
	All breaker releases shall be set as per the ratings shown in the drawings				
	Bus bar sizes shall be taken either as shown in the drawing or as design parameter of 0.8A/Sqmm for AL and 1.2A/Sqmm for Cu which ever is higher.				
	Cable Chamber shall be provided for incoming & outgoing cables or as required				
	All SDFs and SDUs mentioned shall be 415V, 50Hz AC23 A duty type				
	Earth bus shall be full length of the panel and all Switches/breakers shall be double earthed				
	GA drawings for all the panels before manufacturing shall submit to the Electrical Consultants to get approval before manufacturing.				
	The board shall confirm IS 8623 standards.				
29.1	MOTION SIMULATOR PANEL				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Incomer				
	200A, 35kA, 4P MCCB (Microprocessor based) - 1 no				
	Single Phase Digital Ammeters (0-200)A - 3 nos				
	CT 200/5A CL:1 15VA - 3 nos				
	Voltmeter selector switch with three phase digital voltmeter range (0-500) V complete with fuses - 1 no.				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Outgoings				
	80A 25kA TP MCCB - 2 no				
	63A 25kA TP MCCB - 1 no				
	40A 25kA TP MCCB - 1 no				
	25A 25kA TP MCCB - 1no				

**PART I - ENTRANCE PLAZA**

<b>PART I - ENTRANCE PLAZA</b>					
	<b>PART I B - ELECTRICAL WORKS</b>				
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	25A 25kA DP MCCB - 1no				
	Busbar				
	200Amps uniformly rated, continuous duty, 415Volts A/C, 3 phase and neutral Aluminium busbar with colour coded heat shrink sleeves supported on SMC type grip supports 35kA.				
	Accessories as per schematic drawing.				
	Rate to be quoted for				
	Supply	1	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Labour	1	Each		
30	S/F SURGE ARRESTORS/ISOLATORS IN METAL ENCLOSURE				
	Supply of fixing of 2P+NPE Surge Arrestor - Type B+C in metal enclosure complete with all necessary interconnections etc as required.				
	Rate to be quoted for				
	Supply	1	Each		
	Labour	1	Each		
31	Supply and fixing of 100A TPN isolator in sheet steel enclosure including necessary interconnections etc as required.				
	Rate to be quoted for				
	Supply	3	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Labour	3	Each		
32	LT CABLE SUPPLY				
	Supply of one number PVC insulated and PVC sheathed/ XLPE armoured power cable of 1.1 KV grade of following size as required.				
32.1	3.5cx50sq.mm Al Cable				
	Rate to be quoted for				
	Supply	60	Rm		
32.2	3.5cx35sq.mm Al Cable				
	Rate to be quoted for				
	Supply	55	Rm		
32.3	4x16sq.mm Al Cable				
	Rate to be quoted for				
	Supply	10	Rm		
32.4	4x6sq.mm Al Cable				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Supply	10	Rm		
33	Supply and Fixing CAT 6 RJ 45 in the existing metal box, cover plate & accessories and giving necessary connections as required.				
	Rate to be quoted for				
	Supply	4	Each		
	Labour	4	Each		
34	COMPUTER POINTS				
	3nos 6A international sockets controlled by 1 no16A one way switch with indicator in single recessed metal box with front and inner plate etc complete in position and giving connection. (For computers)				
	Rate to be quoted for				
	Supply	4	Each		

**PART I - ENTRANCE PLAZA**

PART I - ENTRANCE PLAZA					
	PART I B - ELECTRICAL WORKS				
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
	Labour	4	Each		
	SUPPLY, CARRIAGE AND ERECTION OF LIGHT FITTINGS				
35	Supply, conveyance, installation, testing and commissioning of pre-wired light fittings with all accessories and lamps of all types directly on wall/ceiling and giving connections with 16/0.20 mm 3 core PVC insulated and sheathed round copper conductor flexible wire or extending the original wiring and giving connections, making good the damages, colour washing etc as required				
35.01	Foot light/ skirting light fittings of all types directly on wall including cutting necessary holes. (Legrand Make Skirting Light 5735 64 or equivalent)				
	Rate to be quoted for				
	Supply	25	Each		
	Labour	25	Each		
35.02	LED recess mounted downlighters (Philps Make 18W DN192B or equivalent)				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Supply	18	Each		
	Labour	18	Each		
35.03	Downlight (Wipro 6W Spotz LED LD35/70 or equivalent)				
	Rate to be quoted for				
	Supply	40	Each		
	Labour	40	Each		
	Supply of pre-wired light fittings with all accessories and lamps of all types etc as required				
35.04	LED surface mounted downlighters (Wipro Cleanray Make Halo13W CRDL11 or equivalent)				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Supply	8	Each		
35.05	LED surface mounted downlighters (Wipro Cleanray Make Halo 8W CRDL11 or equivalent)				
	Rate to be quoted for				
	Supply	4	Each		
35.06	LED Tube (Wipro Make 24W Trim LED LL20 or equivalent)				
	Rate to be quoted for				
	Supply	4	Each		
35.07	LED Batten (Philips Make 6W 1 Ft LED Linea or equivalent)				
	Rate to be quoted for				
	Supply	3	Each		
35.08	Up down light (Philips Make 23W Megapolis Cressida EWP300 or equivalent)				

**PART I - ENTRANCE PLAZA**

PART I B - ELECTRICAL WORKS					
S.N	DESCRIPTION OF ITEM	QTY	UNIT	RATE ( In figures & Words)	AMOUNT (In Rs.)
	Supply	8	Each		
35.09	1200mm sweep ceiling fan complete with all standard accessories excluding regulator.(Havells Make XP-390 or equivalent)				
	Rate to be quoted for				
	Supply	6	Each		
	EARTHING & LIGHTNING PROTECTION				
	EARTHING				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
36	<p>Earthing System comprises of molecularly bonded copper of 99.9% purity on low carbon steel of 3m length (1m (219 20 CU) x 3 nos), having a diameter of 20mm with copper coating thickness of 250 microns with self-coupling bore and peg arrangement (without the need for external coupler) with fault current withstand capability of 15 KA rms value for 1 second. For obtaining desired length, the number of rods shall be increased and is provided with Universal Clamp (2730 20 VA) made of SS 304 for clamping the cable/flat conductor to the rod. Impact point (219 20 IP) on the bottom rod for easy insertion. Earth enhancing mineral compound (ECS PB 12.5) is used for improving the soil conductivity. Earth enhancing mineral compound shall be so designed and constructed that in normal use their performance is reliable and without danger to persons and the surroundings. The material shall be mineral inert to sub soil and shall not pollute the environment. It shall provide a stable environment in terms of physical and chemical properties and exhibit low resistivity. It shall not be corrosive to the earth electrode itself. The</p>				
	Rate to be quoted for				
	Supply	2	Each		
	Labour	2	Each		
37	Supply and providing the following sizes of cast iron gully trap with covering at the top of the inspection chamber of earth pit as required				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	300 x 300 x 6 mm cast iron gully trap with covering				
	Rate to be quoted for				
	Supply	2	Each		
	Labour	2	Each		
38	Supply and providing test joint for the earthing system using 2 Nos of the following sizes of strips including cutting and bending to shape, drilling necessary holes and fixed to the watering pipe etc as required.				
	2 x 25 x 3 mm tinned copper strip				
	Rate to be quoted for				
	Supply	2	Each		
	Labour	2	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
39	Supply and laying the following sizes of strips laid 0.60 m below ground level including excavating trench of suitable size and refilling etc. as required (in ordinary soil)				
	25 x 3 mm Cu tinned Strip				
	Rate to be quoted for				
	Supply	50	Rm		
	Labour	50	Rm		
40	Supply and drawing bare earthing conductors of the following sizes along with wiring/ cables and giving connection as required.				
40.1	2.65 mm bare copper conductor (14 SWG)				
	Rate to be quoted for				
	Supply	15	Rm		
	Labour	15	Rm		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
40.2	3.15 mm bare copper conductor (10 SWG)				
	Rate to be quoted for				
	Supply	20	Rm		
	Labour	20	Rm		
41	Supply of superior quality copper earth socket for the following sizes of earth conductor including crimping etc. as required.				
41.1	2.65 mm bare copper conductor (14 SWG)				
	Rate to be quoted for				
	Supply	2	Each		
	Labour	2	Each		
41.2	3.15 mm bare copper conductor (10 SWG)				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Supply	10	Each		
	Labour	10	Each		
	<b>LIGHTNING PROTECTION</b>				
	Strips (Hortizontal & vertical)				
42	Supply and clamping 25x3 mm Al strips on surface of wall/ parapet/ existing cable tray using clamps fabricated from 25 x 3 mm AL flat duly painted or heavy duty GI spacer saddles, spacing of clamps not exceeding 1m, making good the damages, colour washing etc. as required (for Horizontal run).				
	Rate to be quoted for				
	Supply	130	Rm		
	Labour	130	Rm		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
43	Supply and clamping 25x3 mm Al strips on surface of wall/ parapet/ existing cable tray using clamps fabricated from 25 x 3 mm AL flat duly painted or heavy duty GI spacer saddles, spacing of clamps not exceeding 1m, making good the damages, colour washing etc. as required (for vertical run).				
	Rate to be quoted for				
	Supply	8	Rm		
	Labour	8	Rm		
	Riveting				
44	Riveting , sweating and soldering of one GI/ aluminium/ copper tape with another GI/ aluminium/ copper tape using 2 nos. 6mm dia. GI bolt and nut/ rivets including drilling holes, tinning etc. as required.				
	Rate to be quoted for				
	Supply	32	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Labour	32	Each		
45	Supplying, threading, laying, jointing & clamping of the following sizes of PVC pipe (8 Kgf/ cm <sup>2</sup> ) with all required accessories and clamp including cutting and making good the walls, colour washing etc. on surface of wall / parapet etc. as required.				
	32 mm dia				
	Rate to be quoted for				
	Supply	5	Rm		
	Labour	5	Rm		
	Testing Joint (Down Conductors)				
46	Supply and providing test joint for the earthing system using 2 Nos of the following sizes of strips including cutting and bending to shape, drilling necessary holes and fixed to the watering pipe etc as required. (for electrode)				
	2 x 25 x 3 mm tinned copper strip				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Supply	2	Each		
	Labour	2	Each		
47	Supply and installation of 300x150x75mm metal box neatly painted over a coating of red oxide primer with clamps for connecting down conductor and earth lead with 150mm overlap and 150mm long lead pieces in between and jointing bolts and nuts including all accessories etc as required.				
	Rate to be quoted for				
	Supply	2	Each		
	Labour	2	Each		
	Supply and providing the following sizes of cast iron gully trap with covering at the top of the inspection chamber of earth pit as required				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
48	300 x 300 x 6 mm cast iron gully trap with covering				
	Rate to be quoted for				
	Supply	2	Each		
	Labour	2	Each		
49	Earthing System comprises of molecularly bonded copper of 99.9% purity on low carbon steel of 3m length (1m (219 20 CU) x 3 nos), having a diameter of 20mm with copper coating thickness of 250 microns with self-coupling bore and peg arrangement (without the need for external coupler) with fault current withstand capability of 15 KA rms value for 1 second. For obtaining desired length, the number of rods shall be increased and is provided with Universal Clamp (2730 20 VA) made of SS 304 for clamping the cable/flat conductor to the rod. Impact point (219 20 IP) on the bottom rod for easy insertion. Earth enhancing mineral compound (ECS PB 12.5) is used for improving the soil conductivity. Earth enhancing mineral compound shall be so designed and constructed that in normal use their performance is reliable and without danger to persons and the surroundings. The material shall be mineral inert to sub soil and shall not pollute the environment. It shall provide a stable environment in terms of physical and chemical properties and exhibit low resistivity. It shall not be corrosive to the earth electrode itself. The				
	Rate to be quoted for				

**PART I - ENTRANCE PLAZA**

<b>PART I B - ELECTRICAL WORKS</b>					
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
	Supply	2	Each		
	Labour	2	Each		
50	Supply and providing 6 mm thick 2m x 1m wide electrical grade chequered type rubber mat to withstand 3.3 KV dielectric strength conforming to IS 5429/ 1969.	2	Sqm		
51	Supply & fixing of 9U network rack with adequate number of cable manager, power strip (5Ax5nos) and hardware packets complete with all necessary accessories etc as required				
	Rate to be quoted for				
	Supply	1	Each		
	Labour	1	Each		

**PART I - ENTRANCE PLAZA**

<b>PART I - ENTRANCE PLAZA</b>					
	<b>PART I B - ELECTRICAL WORKS</b>				
<b>S.N</b>	<b>DESCRIPTION OF ITEM</b>	<b>QTY</b>	<b>UNIT</b>	<b>RATE ( In figures &amp; Words)</b>	<b>AMOUNT (In Rs.)</b>
52	Supply and fixing of 20 pair PVC Krone box IP 54 rated complete for connection and branching points for telecommunication cables with all accessories etc as required.				
	Rate to be quoted for				
	Supply	1	Each		
	Labour	1	Each		
	<b>TOTAL (PART I B + PART II B + PART III B)</b>				