

**INDIAN INSTITUTE OF TECHNOLOGY KANPUR****Tender Notice No. 19/Elect./2019****SCHEDULE OF QUANTITY****Name of Work: Electrical work of dinning block for visitor's hostel at IIT Kanpur.****Name of the Contractor**

S. No	Description of Items	Qty	Unit	Rate in Figures in Rupees	Amount
WIRING					
1	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit, with 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.				
a.	Group C	44.00	Point		
2	Wiring for group controlled (looped) light point/fan point/exhaust fan point/ call bell point (without independent switch etc.) with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable in surface/ recessed steel conduit, and earthing the point with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable etc. as required.				
a.	Group C	26.00	Point		
3	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required.				
a.	2 X 1.5 sq. mm +1 X 1.5 sq. mm earth wire	480.00	Metre		
b.	2 X 2.5 sq. mm +1 X 2.5 sq. mm earth wire	210.00	Metre		
c.	2 X 4 sq. mm +1 X 4 sq. mm earth wire	900.00	Metre		
d.	2 X 6 sq. mm + 1 X 6 sq. mm earth wire	244.00	meter		
e.	4 X 6 sq. mm + 2 X 6 sq. mm earth wire	291.00	meter		
f.	4 X 10 sq. mm + 2 X 6 sq. mm earth wire	288.00	meter		
4	Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.				
a.	3 x 1.5 sq. mm	400.00	Meter		

S. No	Description of Items	Qty	Unit	Rate in Figures in Rupees	Amount
b.	1 x 6.0 sq. mm	250.00	Meter		
5	Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required				
a.	20 mm	350.00	meter		
b.	25 mm	550.00	meter		
c.	32 mm	50.00	meter		
6	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.				
a.	20 mm	5.00	meter		
7	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				
a.	Telephone socket outlet	8.00	Each		
b.	TV antenna socket outlet	1.00	Each		
8	Supplying and drawing co-axial TV cable RG-6 grade, 0.7 mm solid 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.	1.00	meter		
9	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.				
a.	2 Pair	340.00	meter		
10	Supplying and fixing following size/ modules, GI box alongwith modular base & cover plate for modular switches in recess etc. as required.				
a.	1 or 2 Module (75 mmX75 mm)	29.00	Each		

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11	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required. (FOR TV, TEL & DATA)				
a.	25 mm	5.00	Meter		
12	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	18.00	Each		
13	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 amps modular socket outlet and 5/6 amps modular switch, connection etc. as required. (For light plugs to be used in non residential buildings).	14.00	Each		
14	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 2 Nos. 3 pin 5/6 A modular socket outlet and 2 Nos. 5/ 6 A modular switch, connections etc. as required. (For light plugs to be used in non residential buildings).	20.00	Each		
15	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 amps modular socket outlet and 15/16 amps modular switch, connection etc. as required.	50.00	Each		
	DISTRIBUTION BOARDS				
16	Supplying and fixing following way single pole and neutral, sheet steel, MCB distribution board, 240 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)				
a.	12 way, Double door	1.00	Each		
17	Supplying and fixing following way (4 + 36), Double door way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/ Isolator)				

S. No	Description of Items	Qty	Unit	Rate in Figures in Rupees	Amount
a.	8 way Double Door	2.00	Each		
b.	12 way Double Door	1.00	Each		
18	Supplying and fixing 5 amps to 32 amps rating, 240/415 volts, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
a.	Single pole	69.00	Each		
b.	Double pole	1.00	Each		
19	Supplying and fixing single pole blanking plate in the existing MCB DB complete etc. as required.	17.00	Each		
20	Supplying and fixing following rating, double pole, (single phase and neutral), 240 V, residual current circuit breaker (RCCB), having a sensitivity current 30 mA in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
a.	40A	20.00	Each		
21	Supplying and fixing following rating, four pole, 415 V, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
a.	40 A	3.00	Each		
22	Supplying and fixing Cable End Box (Loose wire box)(IP 43) suitable for following single pole and neutral, sheet steel, MCB distribution board, 240 V, on surface/ recess, complete with testing and commissioning etc. as required.				
a.	For 10 way, Double door SPN MCBDB	5.00	Each		
23	Supplying and fixing Cable End Box (Loose wire box)(IP 43) suitable for following triple pole and neutral, sheet steel, MCB distribution board, 415 V, on surface/ recess, complete with testing and commissioning etc. as required.				
a.	For 8 way, Double door TPN MCBDB	2.00	Each		

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b.	For 12 way, Double door TPN MCBDB	1.00	Each		
24	Supplying and fixing 30 A, 415 V, TPN Industrial type socket outlet, with 4 pole and earth, metal enclosed plug top alongwith 30 A, "C" curve, TPMCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	5.00	Each		
	LIGHT FIXTURES AND FANS				
25	Supply of LED fitting tube light with heat dissipation capability.Opal diffuser creates optimum light uniformity with minimum glare. It has a system level lumen output not less than 2000 lumens with luminaire efficacy of not less than 100 lm/W. constant current output driver, operating range 150 – 270V AC supply, voltages, LED Colour Temp. from 5700K- 6500K with PF≥0.95 and THD<10% & surge protection ≥ 2.5kv, CRI>80, lumen maintainence of 70% at the end of 50000 burning hours. The luminaire is IP 20 protected. LM 79 report to be submitted for luminaire from NABL accredited lab and LM 80 for LED source issued by LED manufacturer. (Make:- Havells LUMILINEBS20WLED830SPCWH or its equivalent approved make).	40.00	Each		

S. No	Description of Items	Qty	Unit	Rate in Figures in Rupees	Amount
26	Supply of surface mounted round LED downlighter with powder coated die-cast aluminium housing and LEDs of approved make fixed on diecast housing and high efficiency diffuser .Specially designed flat opal diffuser fixed to housing with engg. Plastic front cover, Driver installed on cast aluminium housing or externally and prewired upto the terminal block. It has a system lumen not less than 1500 lumens with luminaire efficacy of not less than 100lm/W and lumen maintainence of 70% at the end of 50000 burning hours with constant current driver output, operating range 150V – 270V, 50Hz AC supply, CCT of 5700K - 6500K with PF≥0.95 and THD must be <10% & surge protection of ≥ 2.5kv. The luminaire is IP 20 protected. LM 79 report to be submitted for luminaire from NABL accredited lab and LM 80 for LED source issued by LED manufacture. LED shall have reverse polarity, open and short circuit protection. (Make:- Havells INTEGRANEOSURFACEDLS10WLED830S or its equivalent approved make).	30.00	Each		
27	Supply of recessed type LED downlighter with powder coated die-cast aluminium housing and LEDs of approved make fixed on diecast housing and high efficiency diffuser .Specially designed flat opal diffuser fixed to housing with engg. Plastic front cover, Driver installed on cast aluminium housing or externally and prewired upto the terminal block. It has a system lumen output not less than 1800 lumens with luminaire efficacy of not less than 100lm/W and lumen maintainence of 70% at the end of 50000 burning hours with constant current driver output, operating range 150V – 270V, 50Hz AC supply, CCT of 5700K - 6500K with PF≥0.95 and THD must be <10% & surge protection of ≥ 2.5kv. The luminaire is IP 20 protected. LM 79 report to be submitted for luminaire from NABL accredited lab and LM 80 for LED source issued by LED manufacture. LED shall have reverse polarity, open and short circuit protection. (Similar to Havells INTERGRANEODLR18WLED840S or its equivalent approved make).	4.00	Each		

S. No	Description of Items	Qty	Unit	Rate in Figures in Rupees	Amount
28	Supply of LED fitting tube light with heat dissipation capability. Opal diffuser creates optimum light uniformity with minimum glare. It has a system level lumen output not less than 900 lumens with luminaire efficacy of not less than 100 lm/W. constant current output driver, operating range 150 – 270V AC supply, voltages, LED Colour Temp. from 5700K- 6500K with PF≥0.95 and THD<10% & surge protection ≥ 2.5kv, CRI>80, lumen maintenance of 70% at the end of 50000 burning hours. The luminaire is IP 20 protected. LM 79 report to be submitted for luminaire from NABL accredited lab and LM 80 for LED source issued by LED manufacturer. (Make:- Havells LUMILINEBS 9WLED830SPCWH or its equivalent approved make).	7.00	Each		
29	Supply & fixing of 25W LED Post top luminaire with housing in pressure die cast aluminium and powder coated aluminium reflector ,IP: 65 protection indirect light, wired with inbuilt constant current driver with CCT of 5700K-6500K and system lumen of >2500 lm, luminaire efficacy of not less than 100Lumen/ per watt. Power factor > 0.95 and voltage range of 140- 270V, 50Hz AC, THD < 15% & surge protection of > 5kV. LED shall have reverse polarity, high voltage, open and short circuit protection.	21.00	Each		
30	Supply of 5 star rated 1200mm sweep ceiling fan, ISI marked, along with copper wound stator, blades, capacitor, downrod etc. but without regulator complete as required. (Make:- Havells ES- 50 PREMIUM or its equivalent approved make).	35.00	Each		
31	Supply of 250mm dia sweep PVC body, 900±10% RPM Exhaust fan with guard and mounting arrangement. (Make:- HAVELLS VENTIL AIR DX or its equivalent approved make).	3.00	Each		
	INSTALLATIONS OF LIGHT FIXTURES AND FANS				
32	Installation, testing and commissioning of pre-wired, LED fitting of all types and wattages, complete with all accessories etc. directly on ceiling/ wall including connections with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable and earthing etc. as required.	81.00	Each		

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33	Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (upto 30 cm) with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable, including providing and fixing phenolic laminated sheet cover on the fan box etc. as required.	35.00	Each		
34	Installation of exhaust fan upto 450 mm sweep in the existing opening, including making good the damage, connection, testing, commissioning etc as required.	3.00			
35	Numbering of ceiling fan/ exhaust fan/ fluorescent fittings as required.	119.00	Each		
	EARTHING				
36	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc. with charcoal/ coke and salt as required.	10.00	Set		
37	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc. with charcoal/ coke and salt as required.	1.00	Set		
38	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	513.00	Meter		
39	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	20.00	Meter		
40	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	20.00	Meter		
41	Providing and laying G.I. tape 32 mm X 6 mm from earth electrode directly in ground as required.	55.00	Meter		
	M.V. PANELS				

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42	Supply installation testing and commissioning of LT power distribution panel with 4P alluminium busbar of 100 A capacity with heat shrinkable colour sleeves with 3 Nos. Resin cast CTs, Class-1.0 and MFM True RMS type digital with min. features of measurements covering A,V,HZ, PF, kW, kVA, kVAR, kWH, kVAH, kVARH, RS-485 Port, LCD display with class-1.0 accuracy for incoming feeder.				
	Incomer one no. 125 A, TP, 35 kA,MCCB with Microprocessor based O/C,S/C,&E/F protection with rotary handle &spreader terminals				
	OUTGOINGS				
	4Nos. 40A, 4P 'C' Curve MCB 10kA				
	4Nos. 32A, 4P 'C' Curve MCB 10kA				
	2Nos. 32A, DP 'C' Curve MCB 10kA				
a	ELECTRICAL PANEL- EP1 as described above.	1.00	Set		
b	1 Nos. 32A DP MCB 10kA in factory fabricated sheet steel structure.	1.00	Set		
	UPS				
43	Supply, installation, testing and commissioning of 2kVA/ 1.6kW (Input 1Phase / output 1 Phase) with Built in Isolation Transformer, Neutral Passing through, Input/ Output sinwave, Static and electromechanic, tranfer time <4ms, power factor >0.8 THDi< 10%, Input voltage 220-240V, Output voltage 230V, 50Hz frequency, efficiency >80%, 0-40 deg C, 30 min battery back-up with 12 V Maintenance Free Sealed Lead Acid batteries alongwith Powder Coated M.S. Rack with unidirectional wheels for housing the Batteries alongwith all accessories including interconnecting cables, lugs, Base Frames, Battery Rack & Battery Circuit breaker complete as required.	1.00	Set		
	IT NETWORKING WORK				
44	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				
a	RJ-45 Lan Outlet	21.00	Each		

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45	Laying UTP cable enhanced cat 5/cat 6 cable in existing steel conduit pipe/GI pipe/ raceway / RCC pipe as reqd. the cost shall also include numbering of networking wire from room to rack as reqd. (wire will be supplied by dept)				
a	1 run of cable	235.00	meter		
b	2 run of cable	200.00	meter		
c	3 run of cable	250.00	meter		
46	Supply & fixing of 10 Pair telephone tag blocks with 'KRONE" terminal connectors fixed in minimum 1.2mm thick powder coated, hinged, lockable door, sheet steel indoor enclosure including civil work such as chase cutting, fixing / concealing the box and making good as required including terminations:	1.00	Set		
	CONVENTIONAL DETECTION SYSTEM				
47	Supply, installatiion, fixing, testing and commissioning of Following Zone Fire Alarm panel, microprocessor based, LCD display, battery charger, inbuilt battery box, with battery (ERTL (N), and system sensor approved).				
a	2Zone	1.00	Set		
48	Supply, installation, fixing, testing and commissioning of plug in type Optical smoke detector with remote LED output + base, LED, Blinking type (LPCB listed).	40.00	No		
49	Supply, installation, fixing, testing and commissioning of ROR cum Fixed temp. Heat Detector (57 deg. C) with remote LED output + base, LED, Blinking type (LPCB listed).	2.00	No		
50	SITC of Siren cum Strobe mount on surface / wall / false ceiling complete as required.	2.00	No		
51	SITC of Manual Call Point (ABS) mount on surface / wall / false ceiling complete with as required.	2.00	No		
52	Supply, installation, fixing, testing and commissioning of Response Indicator lamp assembly on walls/ partitions, surface / recessed etc. in dust tight enclosures, including chase cutting and making good complete as required.	10.00	No		

S. No	Description of Items	Qty	Unit	Rate in Figures in Rupees	Amount
53	SITC of Control module, Monitor Module and Relay Module for necessary interlocking and automatically start smoke exhaust fans and staricase / lift well pressurization fans and to stop automatically air-conditioning plant and indoor air supply units and fire dampers on the detection of a fire signal through the fire alarm panel. It should also ensure automatic opening of all access controlled doors on fire signal.	5.00	No		
54	SITC of Auto Dialer mount on surface / wall / false ceiling complete as required.	1.00	No		
55	Supply and lyaing of following sizes of FRLS PVC insulated (RoHS compliance) class 2 copper conductor, single core cable confirming to IS:694 including making both end terminations with copper lugs, in surface/recessed existing Rigid/Flexible M.S. /PVC conduit as on date as required.				
a	2x1.5 sq.mm (For fire detection signal)	350.00	Meter		
56	Supplying and fixing of following sizes of minimum 1.6/2.0mm thick ISI Mark Rigid M.S. conduit as per IS:9537 Part-3 latest as on date along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.				
a	20 mm internal dia 1.6 mm thick	350.00	Meter		
	Note: i) Contractor shall submit the fire life safety sequence of operation of various exhaust and pressurization fans and AC plants for approval to client / architect / consultant before implementation.				
	ii) All hooters, relay output modules shall also be power wired directly from the fire control panel will 2x1.5 sq.mm in separate conduits in a loop.				
	ii) It will be an absolute responsibility of the electrical contractor to ensure operation of fire safety system / sequence as per NFPA / NBC / Indian standards.				
	PA CUM MUSIC SYSTEM				
	Note- All the bidders must attach authorization certificate and each product's technical sheet & cat. number of any one make from the OEM alongwith bid. This is must unless otherwise bid will be rejected wihout MAF.				

S. No	Description of Items	Qty	Unit	Rate in Figures in Rupees	Amount
57	Supply, installation, testing & commissioning of 280W All in One Power Amplifier combining tuner, MP3 player, pre-amplifier and power amplifier together with USB port, supports running flash disk or portable hard disk Tuning station saving function after power failure 3 MIC inputs with individual volume control 2 Aux line inputs & 1 line output for additional mixer or amplifier. 3 types of speaker output: 100V, 70V, 4-16 ohm.	1.00	No		
58	Supply & installation of Professional CD/DVD player with USB flash port & 19" Rack mount arrangement on basic rate of DVD player 4500/- INR or as approved by client/PMC.	1.00	No		
59	SITC of Desktop Based Microphone with powered by phantom power from the DAP. Microphone shall have red color ring indicator for service, It Should have Balanced type connector and High Sensitivity flexible gooseneck unidirectional condenser microphone, The Microphone shall have built in low frequency attenuator.	1.00	No		
60	Supply Installation testing and comisioning of 6W Ceiling Speaker with back boxhaving tapping at 6W/3W/1.5W with max SPL1M/1W 80dB . Frequency response of 80Hz-20KHz with a dispersion angle of 160 deg.	22.00	No		
61	Supply and drawing of 2-Core 1.5 sq.mm , 48/0.2mm (15 AWG). multi-stranded Unshielded Insulated Straight Fire rated Cable in existing conduit.	200.00	Meter		
62	Supplying and fixing of following sizes of minimum 1.6/2.0mm thick ISI Mark Rigid M.S. conduit as per IS:9537 Part-3 latest as on date along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.				
a	20 mm internal dia 1.6 mm thick	300.00	Meter		
	CCTV SYSTEM				
63	Supply, installation, testing and commissioning of 2 Megapixel high-performance CMOS , Analog HD output, up to 1080P resolution , Min. illumination 0.01 Lux @ (F1.2,AGC ON),0 Lux with IR ,True Day/Night, Smart IR , Up to 20m IR distance ,HD Video Output 1 Analog HD output complete as required .	9.00	Set		

S. No	Description of Items	Qty	Unit	Rate in Figures in Rupees	Amount
64	Supply, installation, testing and commissioning of 8-ch hybrid Digital Video Recorder, synchronous playback at up to 1080p resolution Up to 2MP ONVIF conformant IP cameras input H.264+ compression Full channel recording at up to 1080p resolution.Two SATA interfaces (up to 2TB of capacity per HDD), 2 Self adaptive high speed network ports.8 channel synchronous playback upto 1080 P resolution. Supports Video content Analitics for Analogue & IP Cameras. HDMI, VGS & USB interfaces.	1.00	No		
65	Supply and laying including terminations 3 + 1 PVC insulated copper conductor cable for camera in existing conduit.	525.00	Meter		
66	Supplying and fixing of following sizes of minimum 1.6/2.0mm thick ISI Mark Rigid M.S. conduit as per IS:9537 Part-3 latest as on date along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.				
a	25 mm internal dia 1.6 mm thick	138.00	Meter		
	15 KW SOLAR SYSTEM				
67	Supplying, installation, testing & commissioning of On grid interactive roof top solar photo voltaic power generation system I/C space frame including accessories such as MC4 connectors, cable lugs, ties, thimbles, etc. as described below:				
	50 Nos. Poly crystalline Silicon Solar Photo Voltaic Modules of 310 Wp @ STC				
	1 Set Module Mounting MS Structure, Suitable to Mount 15 KWp Solar Modules				
	1No. Grid Tie Inverter of 15kVA rating				
	1 Set AC & DC cables of appropriate rating and length as per requirement.				
	1No. Lightning Arrestor				
	Miscellaneous items like Cable lugs, Ties, cable trays (if required), Earthing strips, MC4 connector pairs, thimbles, conduits etc.				
a	Solar System described as above.	1.00	Set		
	LIGHTNING CONDUCTOR				

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68	Supply, fixing, testing and commissioning of single spike air terminals of 10 mm dia.of 1meter long as required and as per site conditions. the air terminal shall be manufactured with aluminium. The terminal shall be provided with the integrated / attached threaded base support suitable for mounting the terminals as per site condition. The base support shall be minimum 3 mm thick and shall have inbuilt connector fitting for connection of lightning conductor in such away that conductor contact area shall not be less than 40mm on all side of the conductor as per IS/IEC 62305.	5.00	Each		
69	Supply, fixing, testing and commissioning of 8mm dia Aluminium Round Conductor including expansion piece at every 20 Mtr for making mesh & air termination network at terrace levels, to be installed on wall / parapet to meet the requirements as per IS/IEC 62305.	352.00	Meter		
70	Supply, fixing, testing and commissioning of roof / mesh Conductor holder for holding of 8 mm round conductor. The minimum height of the conductor holder should be 85 mm, to maintain a clear height between roof and conductor and install at every 1 mtr with accessories such as Stainless Steel Self-Threaded Screw With washer to meet requirements to IS/IEC 62305	329.00	Each		
71	Supply, fixing, testing and commissioning of Stainless Steel Universal Clamp as per as per IS/IEC 62305. etc complete as required	66.00	Each		
72	Supply fixing, testing and commissioning of Stainless Steel Clamp for connecting to Down Conductor through metal column as peras per IS/IEC 62305. etccomplete as required	22.00	Each		
73	Supply, fixing, testing and commissioning of Lightning counter indicating date and time of last record In-addition having to see previous history of surges etc complete as required to meet requirements to IS/IEC 62561-1 etc. complete as required	1.00	Each		

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74	Supply, fixing, testing and commissioning of Test joint For Connecting down conductors with earth entries or for connecting conductors of different materials (Al round conductor for down conductor to connect 25 mm x 3 mm GI earth strip along with GI Strip holder), as per IS/IEC 62305. etc complete as required.	4.00	Each		
	EXTERNAL POWER CABLE				
75	Supplying and laying of one number XLPE power cable of 3.5 cx 95 sq.mm.aluminium conductor, steel armoured cable of 1.1kV grade as per IS:1554 (Part-1) as reqd complete in following manners.		Each		
a	In ground with protective covering and sand cushioning	100.00	Meter		
b	In existing pipe	15.00	Meter		
c	In existing masonry open duct	5.00	Meter		
d	On surface with MS clamps	5.00	Meter		
76	Supply and laying of HDPE pipe ISI mark of 32 mm dia, minimum 2mm thick I/c cartage loading & unloading etc. as reqd.				
a	In ground with protective covering and sand cushioning	100.00	Meter		
b	In existing pipe	15.00	Meter		
c	In existing masonry open duct	6.00	Meter		
d	On surface with MS clamps	3.00	Meter		
77	Providing, laying and fixing following dia G.I. pipe (medium class) in ground complete with G.I. fittings including trenching (75 cm deep) and re-filling etc as required.				
a	80 mm	12.00	Meter		
	Total Rs.				