

**Construction of new building for setting up for Multidisciplinary Lab at Medical College,
Thiruvananthapuram.**

Part IB -Electrical works					
SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
A. Wiring					
1	Wiring for light point / fan point / exhaust fan point / call bell point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface/recessed PVC conduit with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sqmm, FR PVC insulated copper conductor single core cable etc. as required.				
1.1	Group B	Point	820		
1.2	Group C	Point	414		
2	Wiring for twin control light point with 1.5 sq.mm FR 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. FR PVC insulated copper conductor single core cable etc as required.	point	15		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
3	Wiring for light/power plug with 2 X 4 sq.mm FR PVC insulated copper conductor single core cable in surface/recessed PVC conduits along with 1 no. 4 sqmm FR PVC insulated copper conductor single core cable for loop earthing as required.	m	720		
4	Wiring for circuit/submain wiring along with earth wire with the following sizes of FR PVC insulated copper conductor, single core cable in surface/recessed PVC conduit as required.				
4.1	2 X 1.5 sqmm + 1.5 sqmm earth wire	Rm	3068		
4.2	2 X 2.5 sqmm + 2.5 sqmm earth wire	Rm	9000		
4.3	2 X 6 sq. mm + 1 X 6 sq. mm earth wire	Rm	720		
4.4	4 X 2.5 sq. mm + 2 X 2.5 sq. mm earth wire	Rm	200		
4.5	4 X 4 sq. mm + 2 X 4 sq. mm earth wire	Rm	300		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
5	Telephone wiring in existing conduit : Supplying and drawing following pair 0.5 sq.mm FR PVC insulated copper conductor,unarmored telephone cable in the existing surface/recessed PVC conduit as required				
5.1	2 Pair	Rm	1200		
5.2	4 Pair	Rm	720		
6	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.	Rm	200		
7	Supplying and fixing of following sizes of PVC conduit along with the 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 for wiring.				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
7.1	20mm	Rm	1800		
7.2	25mm	Rm	1400		
7.3	32mm	Rm	800		
8	Supplying and fixing metal box of following sizes (nominal size) on surface or in recess with suitable size of phenolic laminated sheet cover in front including painting etc as required.				
8.1	150 mm X 150 mm X 60 mm deep	each	30		
8.2	200 mm X 250 mm X 60 mm deep	each	30		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
9	Supplying and fixing following modular switch/socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				
9.1	Telephone socket outlet	Each	90		
9.2	TV antenna socket outlet	Each	5		
10	Supplying and fixing stepped type electronic fan regulator on existing modular plate switch box including connections but excluding modular plate etc.as required.	Each	171		
11	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Each	130		
12	Supply and fixing following size/modules, GI box along with the modular base &cover plate for modular switches in recess etc.as required.				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
12.1	1 or 2 Module (75mm x 75mm)	Each	180		
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, painting etc. as required	Each	210		
14	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess including providing and fixing 3pin 15/16 modular socket outlet and 15/16 amps modular switch, connection, painting etc. as required	Each	95		
B. Installation of Light fitting					

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
15	Installation, testing and commissioning of pre-wired, fluorescent fitting / compact fluorescent 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.	Each	1025		
16	Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (upto 30 cm) with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable etc. as required.	Each	171		
17	Supplying and fixing extra down rod of 10 cm length G.I. pipe ,15 mm dia, heavy gauge including painting etc. as required. (Note : More than 5 cm length shall be rounded to the nearest 10 cm and 5 cm or less shall be ignored)	Each	250		
18	Installation of exhaust fan in the existing opening, including making good the damage, connection, testing, commissioning etc. as required.				
18.1	Upto 450 mm sweep	Each	35		
C. MCBs & DBs					

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
19	Providing & fixing 100A, 16kA, MCCB in the exiting cubicle panel board / DB including drilling holes in cubicle, making connections etc as required.	Each	8		
20	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 200 amps tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCB's, with provision of 100 amps TP 16 KA MCCB as incomer, interconnection between incomer MCCB and bus bars (but without MCB's/ MCCB) as required . (Note : Vertical type MCB TPDB is normally used where 3 phase outlets are required.)				
20.1	8 Way TP	Each	8		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
21	Supplying and fixing following way prewired TP&N MCB distribution board of steel sheet for 415 volts on surface/ recess complete with loose wire box, terminal connectors for all incoming and outgoing circuits, duly prewired with suitable size FR PVC insulated copper conductor up to terminal blocks, tinned copper bus bar, neutral link, earth bar, din bar, detachable gland plate, interconnections, powder painted including earthing etc. as required.(But without MCB/ RCCB/ Isolator)				
21.1	4 way, Double door	Each	8		
21.2	6 way, Double door	Each	8		
21.3	8 way, Double door	Each	6		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
22	Supplying and fixing following way prewired SP&N MCB distribution board of steel sheet for 230 volts on surface/ recess complete with loose wire box, terminal connectors for all incoming and outgoing circuits, duly prewired with suitable size FR PVC insulated copper conductor up to terminal blocks, tinned copper bus bar, neutral link, earth bar, din bar, detachable gland plate, interconnections, powder painted including earthing etc. as required.(But without MCB/ RCCB/ Isolator)				
22.1	4 way Double door	Each	2		
22.2	8 way Double door	Each	2		
23	Supplying and fixing 5 amps to 32 amps rating, 240 volts `C' curve, miniature circuit breaker suitable for lighting and other loads of following poles in the existing MCB DB complete with connections,m testing and commissioning etc, as required.				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
23.1	Single pole	Each	840		
23.2	Double pole	Each	6		
23.2	Triple pole	Each	40		
24	Supplying and fixing single pole blanking plate in the existing MCB DB complete etc. as required.	Each	100		
25	Supplying and fixing following rating, four pole, 415 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
25.1	40 amps	Each	14		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
25.2	63 amps	Each	14		
25.3	100 amps	Each	11		
26	Supplying and fixing following rating, double pole, (single phase and neutral), 230 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.				
26.1	25 amps	Each	2		
26.2	40 amps	Each	2		
27	Supplying and fixing following rating, four pole, (three phase and neutral), 415 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.				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
27.1	25	Each	14		
27.2	40	Each	14		
27.3	63	Each	11		
28	Supplying and fixing DP sheet steel enclosure on surface/ recess along with 25/32 amps, 240 volts "C" curve DP MCB complete with connections, testing and commissioning etc. as required.	Each	10		
29	Supplying and fixing TP sheet steel enclosure on surface/ recess along with 16/24/32 amp, 415 volts "C" curve TP MCB complete with connections, testing and commissioning etc. as required.	Each	25		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
30	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' series, 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.	Each	10		
31	Supplying and fixing 20 amps, 415 volts, TPN industrial type, socket outlet, with 4 pole and earth, metal enclosed plug top along with 20 amps `C' series, TP, 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.	Each	10		
32	Providing and fixing M.V. danger notice plate of 200 mm X 150 mm, made of mild steel, at least 2 mm thick, and vitreous enameled white on both sides, and with inscription in single red colour on front side as required.	Each	15		
33	Providing and fixing H.T. danger notice plate of 250 mm X 200 mm, made of mild steel, at least 2 mm thick, and vitreous enameled white on both sides, and with inscription in single red colour on front side as required.	Each	5		
D. Cable Trays					

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
34	Supplying and installing following size of perforated 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 & nuts, painting suspenders etc as required.				
34.1	100 mm width X 50 mm depth X 1.6 mm thickness	m	450		
34.2	200 mm width X 50 mm depth X 1.6 mm thickness	m	300		
34.3	300 mm width X 50 mm depth X 1.6 mm thickness	m	400		
34.4	450 mm width X 50 mm depth X 2.0 mm thickness	m	300		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
35	Supplying and installing following size of perforated pre-painted M.S. cable trays bends with perforation not more than 17.5%,, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
35.1	100 mm width X 50 mm depth X 1.6 mm thickness	Each	12		
35.2	200 mm width X 50 mm depth X 1.6 mm thickness	Each	15		
35.3	300 mm width X 50 mm depth X 1.6 mm thickness	Each	12		
35.4	450 mm width X 50 mm depth X 2.0 mm thickness	Each	10		

Sl No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
36	Supplying and installing following size of perforated pre-painted M.S. cable trays Tee's with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
36.1	100 mm width X 50 mm depth X 1.6 mm thickness	Each	15		
36.2	200 mm width X 50 mm depth X 1.6 mm thickness	Each	10		
36.3	300 mm width X 50 mm depth X 1.6 mm thickness	Each	10		
36.4	450 mm width X 50 mm depth X 2.0 mm thickness	Each	5		
E. BUS DUCT					

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
37	Supply, installation, testing and commissioning of 1250A capacity sandwich, epoxy insulated, compact, indoor type (TPN) bus trunking on wall/ceiling, with high conductivity aluminium conductor in convenient sections for use on 3 phase 4 wire, 415V, 50KA for 1sec, AC supply. The housing shall be constructed from 1.6mm (min) thick electro galvanised sheet steel enclosure, IP54 with epoxy coated. the busduct shall be complete with 4 nos aluminium busbar, termination ends, elbow, necessary joints, flexibles, elbow joints, & expansion joints, fire barriers at walls, / ceiling crossing, continuous earthing with 25 x 6 mm copper strip on each side including clamping bracket, angle iron bracket, steel fasteners, connecting to earthing system as required. The bus duct shall comply with IEC and BS standards. The routine test certificate as per IS/IEC and type test certificate of identical bus trunking shall be furnished.				
37.1	1250 amps 50KA SC for 1 sec	Metre	110		
F. Earthing					
38	Earthing with G.I. earth pipe 4.5 metre long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal/ coke and salt as required.	Set	6		
39	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 metre long etc. with charcoal/ coke and salt as required.	Set	12		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
40	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 metre long etc. with charcoal/ coke and salt as required.	Set	8		
41	Supplying and laying 6 SWG G.I. wire at 0.50 metre below ground level for conductor earth electrode, including connection/ termination with GI thimble etc. as required.	Rm	250		
42	Supplying and laying 25 mm X 5 mm copper strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of brass nut bolt & spring washer spaced at 50mm)	Rm	250		
43	Supplying and laying 25 mm X 5 mm G.I strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with G.I. nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I. nut bolt & spring washer spaced at 50mm)	Rm	400		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
44	Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required.	Rm	40		
45	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.	m	100		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
46	Providing and laying earth connection from earth electrode with 6 SWG dia G.I. Wire in 15 mm dia G.I. pipe from earth electrode including connection with G.I. thimble excavation and re-filling as required.	Rm	80		
47	Providing and laying earth connection from earth electrode with 4.00 mm dia copper wire in 15 mm dia G.I. pipe from earth electrode including connection with copper thimble excavation and re-filling as required.	Rm	200		
48	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	Rm	200		
49	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	Rm	800		
50	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	Rm	400		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
51	Providing and fixing 4.00 mm dia copper wire on surface or in recess for loop earthing along with existing surface/ recessed conduit/ submain wiring/ cable as required.	Rm	250		
G MV Cable Laying					
52	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, sand cushioning, protective covering and refilling the trench etc as required.				
52.1	Upto 35 sq. mm	Rm	400		
52.2	Above 35 sq. mm and upto 95 sqmm	Rm	250		
52.3	Above 95 sq. mm and upto 185 sqmm	Rm	100		
52.4	Above 185 sq. mm and upto 400 sqmm	Rm	400		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
53	Laying of one number additional PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground in the same trench in one tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc as required.				
53.1	Upto 35 sq. mm	Rm	300		
53.2	Above 35 sq. mm and upto 95 sqmm	Rm	125		
53.3	Above 95 sq. mm and upto 185 sqmm	Rm	100		
53.4	Above 185 sq. mm and upto 400 sqmm	Rm	200		
54	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required.				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
54.1	Upto 35 sq. mm	Rm	30		
54.2	Above 35 sq. mm and upto 95 sqmm	Rm	40		
54.3	Above 95 sq. mm and upto 185 sqmm	Rm	40		
54.4	Above 185 sq. mm and upto 400 sqmm	Rm	60		
55	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing masonry open duct as required.				
55.1	Upto 35 sq. mm	Rm	120		
55.2	Above 35 sq. mm and upto 95 sq. mm	Rm	175		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
55.3	Above 95 sq. mm and upto 185 sq. mm	Rm	250		
55.4	Above 185 sq. mm and upto 400 sq. mm	Rm	350		
56	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.				
56.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	Rm	200		
56.2	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	Rm	50		
56.3	Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)	Rm	40		
56.4	Above 185 sq. mm and upto 400 sq. mm (clamped with 40x3mm MS flat clamp)	Rm	30		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
57	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.				
57.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	Rm	1200		
57.2	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	Rm	800		
57.3	Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)	Rm	250		
57.4	Above 185 sq. mm and upto 400 sq. mm (clamped with 40x3mm MS flat clamp)	Rm	100		
58	Supplying and making cable route marker with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) of size 60 cm X 60 cm at the bottom and 50 cm X 50 cm at the top with a thickness of 10cm including inscription duly engraved as required.	Each	80		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
HT Cable Laying					
59	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 11 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.				
59.1	Above 120 sq. mm and upto 400 sq. mm	Rm	900		
60	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 11 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required.				
60.1	Above 120 sq. mm and upto 400 sq. mm	Rm	50		
61	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 11 KV grade of following size in the existing masonry open duct as required.				
61.2	Above 120 sq. mm and upto 400 sq. mm	Rm	50		
I. MV Cable End Termination					

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
62	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
62.1	3.5C x 300 sqmm	Each	14		
62.2	3.5C x 185 sqmm	Each	10		
62.3	3.5C x 150 sqmm	Each	6		
62.4	3.5C x 120 sqmm	Each	14		
62.5	3.5C x 70 sqmm	Each	6		
62.6	3.5C x 50 sqmm	Each	4		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
62.7	3.5C x 35 sqmm	Each	10		
62.8	4C x 25 sqmm	Each	26		
62.9	4C x 16 sqmm	Each	40		
62.10	4C x 10 sqmm	Each	28		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
J. HV Cable end Termination					
63	Supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 11 KV grade as required :				
63.1	300 sqmm	Each	4		
64	Supplying and making outdoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 11 KV grade as required :				
64.1	300 sqmm	Each	4		
64	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				
64.1	50 mm dia	Rm	150		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
64.2	80 mm dia	Rm	120		
64.3	100 mm dia	Rm	100		
64.4	150 mm dia	Rm	50		
65	Providing, laying and fixing following dia RCC pipe NP2 class (light duty) in ground complete with RCC collars, jointing with cement mortar 1:2 (1 cement : 2 fine sand) including trenching (75 cm deep) and refilling etc as required.				
65.1	150 mm dia	m	100		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
65.2	300 mm dia	m	150		
A	HT Works				
1	Supply, installation, testing and commissioning of Indoor Unitised substation of 750KVA, 11000 / 433 V, 3 phase Dry type `Transformer, AN cooled, vector group Dyn11, class F insulated Cast Resin transformer with off load tap change having tapping range of $\pm 5\%$ in steps of 2.5%, provided with LV cable box suitable for terminating 4 runs of 3.5 x 300 Sq mm AYFY / XLPE cable or 1250A Aluminium busduct. The USS shall consist of 11kV, 630A, 350 MVA, 18.3kA for 3 sec, VCB panel with 3OC+1E/F, shunt trip, LED and mechanical ON/OFF/Trip indication, resin cast 11kV CT/PT unit for metering & protection, TOD meter for HT metering, ammeter, voltmeter, epoxy encapsuled copper bus bar. protective relays for protection of the transformer, with all required accessories shall be provided.				
	The HV cable box shall be suitable for terminating 11kV, 3 core 300 sq mm XLPE cable , along with all standard accessories in conformity with all required standards. Neutral CT of 200/5A, 5P10, 15VA shall be provided on the transformer neutral terminal with restricted earth fault relay connected to the LT panel. The LT circuit breaker shall be provided with 1200A, FP, 50kA, microprocessor based ACB with OC & EF protection.				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
	The housing of the USS shall be made up of 2 mm thick CRCA sheet. Door interlock to prevent access to live terminal of HT / LT breaker with all required accessories shall be provided. The enclosure shall be compartmentalised. 1 no. emergency trip push button shall be wired with suitable size wire and provided outside the substation as per the statutory requirement. .	Set	1		
2	Supply of 11kV, 3C 300sqmm (E) grade XLPE insulated, PVC sheathed compact circular armoured aluminium conductor HT power cable, insulation screened with extruded semi conducting compound in combination with copper tape suitable for 11kV earthed system confirming to relavent standard.	m	1000		
B	DG Set				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
3	Supply, Installation, Testing and Commissioning of 600 KVA water cooled, radiator type, four stroke, electric start D.G Set with acoustic enclosure and control panel. The DG shall be suitable for AMF operation. The alternator shall be brushless, self excited, self regulated, brushless, suitable for continuous operation at 1500 rpm, generating 415 V +/- 5% at 0.8 p.f, 50Hz, 3 phase, 4 wire system generally conforming to BS: 2613 & IS: 4722. The control panel shall be provided with 1 no. 1000A FP 50kA Thermal magnetic ACB with O/C & SC protection, ammeter,voltmeter, energy meter, frequency meter,power factor meter, low set earth fault relay using 175/5A 5P10 10VA CT in the neutral earthing conductor.				
	Both Engine and Alternator shall be mounted on common channel iron base frame, and with standard accessories such as antivibration pad, lead acid batteries (as specified by engine manufacturer) and engine driven battery charger along with leads, battery stand, fuel piping from fuel tank to Engine, electronic governor, Residential silencer, GI exhaust pipe insulated and clad with aluminium shall be taken above the building with cowl at top, suitable size cable termination box etc as required. Rate shall be inclusive of all lift, lead charges. The work should be as per Electrical Inspectorate / Pollution control board norms.	Set	1		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
C	LT Panels				
4	Supply, Installation, Testing & Commissioning of Main panel, cubicle type, made out of 2mm thick CRCA sheet, totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system with busbars extendable on both sides, including internal wiring with suitable size wires, rotary handle, spreaders etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.				
	<u>INCOMER</u>				
	1 No. 1250A, FP, 50kA, EDO, microprocessor based ACB with 3 OC, SC, EF release with shunt trip coil.				
	1 No. 1000A, FP, 50kA, EDO, microprocessor based ACB with 3 OC, SC, EF release with shunt trip coil.				
	<u>BUSBARS</u>				
	1 Set of 1250 Amp TPN busbars of high conductivity electrolytic quality Copper.				
	<u>INSTRUMENTS</u>				
	2 Nos 3 phase Digital Multi function meter to read V, A, F with Acc class 1.				
	2 Nos 3 phase 4 wire CT operated energy meter, 5-10A, Acc. Class 1.				
	2 Set of phase indicating lamps, LED type, RYB.				
	2 Set of 2A 10kA C curve SP control MCB				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
	1 Set of 1250/5A, Class 1.0, 15VA, Cast Resin CT for metering.				
	1 Set of 1000/5A, Class 1.0, 15VA, Cast Resin CT for metering.				
	1 No. AMF relay with all requirement for the automatic operation of the DG set.				
	2 set Analogue Voltmeter, Acc class 1, with voltmeter selector switch				
	6 nos of Analogue Ammeter, Acc. Class 1				
	2 set low set earth fault relay for the transformer and DG set.				
	1 set Electrical interlock between the incomers.				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
	<u>OUTGOING</u>				
	4Nos. 400A, TPN, 35kA, MCCB with Thermal Magnetic release, Ics=Icu, having ajustable over load & short circuit protection.				
	4Nos. 250A, TPN, 25kA, MCCB with Thermal Magnetic release, Ics=Icu, having ajustable over load & short circuit protection.				
	2 Nos. 200A, TPN, 25kA, MCCB with Thermal Magnetic release, Ics=Icu, having ajustable over load & short circuit protection.	Job	1		
5	Supply, Installation, Testing & Commissioning of AC panel, cubicle type, made out of 2mm thick CRCA sheet, totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system, including internal wiring with suitable size wires, rotary handle, spreaders etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.				
	<u>INCOMER</u>				
	1 No. 250A, TPN, Switch disconnecter unit (Isolator), AC23, 415V, 50Hz complete with handle assembly.				
	<u>BUSBARS</u>				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
	1 Set of 250 Amp TPN busbars of high conductivity electrolytic quality Aluminium alloy.				
	<u>INSTRUMENTS</u>				
	1 No 3 phase Digital Multi function meter to read V, A, F with Acc class 1.				
	1 No 3 phase 4 wire CT operated energy meter, 5-10A, Acc. Class 1.				
	1 Set of phase indicating lamps, LED type, RYB.				
	1 Set of 2A 10kA C curve SP control MCB				
	1 Set of 250/5A, Class 1.0, 10VA, Cast Resin CT for metering.				
	<u>OUTGOING</u>				
	12 Nos. 40A, TPN, C curve, MCB	Job	2		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
6	Supply, Installation, Testing & Commissioning of 205kVAR APFC panel, cubicle type, made out of 2mm thick CRCA sheet, totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system, including internal wiring with suitable size wires, rotary handle, spreaders etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.				
	<u>INCOMER</u>				
	1 No 400A, FP, 35kA, MCCB with Thermal Magnetic release, Ics=Icu, having adjustable over load & short circuit protection.				
	<u>BUSBARS</u>				
	1 Set of 400 Amp TPN busbars of high conductivity electrolytic quality Aluminium alloy.				
	<u>INSTRUMENTS</u>				
	1 No 3 phase Digital Multi function meter to read V, A, F with Acc class 1.				
	1 Set of phase indicating lamps, LED type, RYB.				
	1 Set of 2A 10kA C curve SP control MCB				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
	1 Set of 400/5A, Class 1.0, 10VA, Cast Resin CT for metering.				
	1 no. 12 stage APFC relay				
	10 set On, Off push button				
	10 set On, Off LED type indication lamp				
	<u>OUTGOING</u>				
	7 Nos. 63A, TPN, D curve, MCB				
	3 Nos. 32A, TPN, D curve, MCB				
	3 Nos. 10kVAR MPP heavy duty capacitor with capacitor duty contactor & 7% detuned harmonic filter.				
	6 Nos. 25kVAR MPP heavy duty capacitor with capacitor duty contactor & 7% detuned harmonic filter.				
	1 Nos. 25kVAR MPP heavy duty capacitor with 7% detuned harmonic filter directly connected.	Job	1		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
7	Supply, Installation, Testing & Commissioning of PSB cubicle type, made out of 2mm thick CRCA sheet, totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system with busbars extendable on both sides, including internal wiring with suitable size wires, rotary handle, spreaders etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.				
	<u>INCOMER</u>				
	1 No. 200A, TPN, Switch disconnecter unit (Isolator), AC23, 415V, 50Hz complete with handle assembly.				
	<u>BUSBARS</u>				
	1 Set of 200 Amp TPN busbars of high conductivity electrolytic quality Aluminium alloy.				
	<u>INSTRUMENTS</u>				
	1 No 3 phase Digital Multi function meter to read V, A, F with Acc class 1.				
	1 No 3 phase 4 wire CT operated energy meter, 5-10A, Acc. Class 1.				
	1 Set of phase indicating lamps, LED type, RYB.				
	1 Set of 2A 10kA C curve SP control MCB				
	1 Set of 200/5A, Class 1.0, 10VA, Cast Resin CT for metering.				
	<u>OUTGOING</u>				
	6 Nos. 63A, TPN, C curve, MCB				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
	4 Nos. 40A, TPN, C curve, MCB	Job	2		
7	Supply, Installation, Testing & Commissioning of utility panel, cubicle type, made out of 2mm thick CRCA sheet, totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system, including internal wiring with suitable size wires, rotary handle, spreaders etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.				
	<u>INCOMER</u>				
	1Nos. 160A, TPN, 25kA, MCCB with Thermal Magnetic release, Ics=Icu, having adjustable over load & short circuit protection.				
	<u>BUSBARS</u>				
	1 Set of 200 Amp TPN busbars of high conductivity electrolytic quality Aluminium alloy.				
	<u>INSTRUMENTS</u>				
	1 No 3 phase Digital Multi function meter to read V, A, F with Acc class 1.				
	1 No 3 phase 4 wire CT operated energy meter, 5-10A, Acc. Class 1.				
	1 Set of phase indicating lamps, LED type, RYB.				
	1 Set of 2A 10kA C curve SP control MCB				
	1 Set of 160/5A, Class 1.0, 10VA, Cast Resin CT for metering.				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
	<u>OUTGOING</u>				
	5 Nos. 40A, TPN, C curve, MCB				
	4 Nos. 63A, TPN, C curve, MCB	Job	1		
7	Supply, Installation, Testing & Commissioning of LSB cubicle type, made out of 2mm thick CRCA sheet, totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system, including internal wiring with suitable size wires, rotary handle, spreaders etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.				
	<u>INCOMER</u>				
	1 No. 125A, TPN, Switch disconnecter unit (Isolator), AC23, 415V, 50Hz complete with handle assembly.				
	<u>BUSBARS</u>				
	1 Set of 150 Amp TPN busbars of high conductivity electrolytic quality Aluminium alloy.				
	<u>INSTRUMENTS</u>				
	1 No 3 phase Digital Multi function meter to read V, A, F with Acc class 1.				
	1 No 3 phase 4 wire CT operated energy meter, 5-10A, Acc. Class 1.				
	1 Set of phase indicating lamps, LED type, RYB.				
	1 Set of 2A 10kA C curve SP control MCB				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
	1 Set of 125/5A, Class 1.0, 10VA, Cast Resin CT for metering.				
	<u>OUTGOING</u>				
	8 Nos. 32A, TPN, C curve, MCB	Job	2		
8	Supply, Installation, Testing & Commissioning of SSB-1 & SSB-2 panel, cubicle type, made out of 2mm thick CRCA sheet, totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC, including internal wiring with suitable size wires, rotary handle, spreaders etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.				
	<u>INCOMER</u>				
	1 No. 400A, TPN, Switch disconnecter unit (Isolator), AC23, 415V, 50Hz complete with handle assembly.				
	<u>BUSBARS</u>				
	1 Set of 400 Amp TPN busbars of high conductivity electrolytic quality Aluminium alloy.				
	<u>INSTRUMENTS</u>				
	1 No 3 phase Digital Multi function meter to read V, A, F with Acc class 1.				
	1 No 3 phase 4 wire CT operated energy meter, 5-10A, Acc. Class 1.				
	1 Set of phase indicating lamps, LED type, RYB.				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
	1 Set of 2A 10kA C curve SP control MCB				
	1 Set of 400/5A, Class 1.0, 10VA, Cast Resin CT for metering.				
	<u>OUTGOING</u>				
	1 No. 200A, TPN, 25kA, MCCB with Thermal Magnetic release, Ics=Icu, having ajustable over load & short circuit protection.				
	2 Nos. 160A, TPN, 25kA, MCCB with Thermal Magnetic release, Ics=Icu, having ajustable over load & short circuit protection.				
	3 Nos. 125A, TPN, 25kA, MCCB with Thermal Magnetic release, Ics=Icu, having ajustable over load & short circuit protection.	Job	2		
C	UPS				
9	Supply, installation, testing & commissioning of 10 kVA, 3 phase, input, 3 phase output, true on-line UPS system with 30 minutes back up (full load), including all accessories, SMF batteries VRLA type with powder coated MS cabinet, battery cabling including all accessories as required complete having following specification.				
	Fully digital controlled based on DSP				
	Power factor corrected from end > 0.9				
	Pure sine wave output.				
	Full time output voltage & frequency regulation				
	Auto regulation of battery end voltage				
	Intelligent interface with LED/LCD display				
	Static bypass switch & manual by pass switch				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
	Auto temperature compensation	Nos	2		
D	Cables				
10	Supply of following size 1.1 KV grade XLPE insulated, PVC sheathed, armoured Aluminium conductor power cable conforming to IS 7098 (Part 1) amended upto date.				
10.1	3.5C x 300 sqmm	Rm	250		
10.2	3.5C x 185 sqmm	Rm	625		
10.3	3.5C x 150 sqmm	Rm	80		
10.4	3.5C x 120sqmm	Rm	100		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
10.5	3.5C x 70 sqmm	Rm	740		
10.6	3.5C x 50 sqmm	Rm	600		
10.7	3.5C x 35 sqmm	Rm	500		
10.8	4C x 25 sqmm	Rm	1200		
10.9	4C x 16 sqmm	Rm	1400		
10.10	4C x 10 sqmm	Rm	1200		
10.11	4C x 6 sqmm	Rm	480		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
E	Light fitting & Fan				
11	Supply of 1x28W, indoor surface mountable fluorescent CRCA sheet steel power coated body light fixture, 28W T5 lamp, electronic HPF ballast, lamp holder, prewired complete with all necessary accessories suitable for operation on 230V, 50Hz AC supply as required (Wipro WIF 20128 SG or Philips TMS122 M 2xTL5-28W EBT or GE GET CI 1x28 C/S HF)	each	387		
12	Supply of 4x28 W, indoor high bay surface mounted fluorescent CRCA body light fixture, closed version, 4 nos 28 W T5 lamps, electronic HPF ballast, prewired complete with all necessary accessories suitable for operation on 230V, 50Hz AC supply as required (Philips TPS 325 4xTL5-28W EBP or Wipro WFH 30428 SGW or Equi).	each	8		
13	Supply & installation of 4x14W, recess mounted fluorescent light fixture with CRCA housing, micro optics, 14 W lamps, prewired complete with all necessary accessories like chain hook etc for installation suitable for operation on 230V, 50Hz AC supply as required.(Wipro WVF 22414 SGW / Philips TBS869 4xTL-5-14W EBP or GE GETC 4x14 MO MLC-R 300 HF)	each	424		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
14	Supply of 1x18W indoor decorative luminaire with opal acrylic diffuser, end cap, and coloured rims, 1no. 18W T8 lamp, prewired complete with all necessary accessories suitable for operation 230V 50Hz AC supply complete with all mounting accessories as required. (Philips MIROLTA Slim 18W HF or Wipro WRF 211118 or equivalent)	nos	92		
15	Supply of 1x18W, indoor surface mountable mirror optic luminaire with Paralite P5 louvers, 18W CFL lamp, electronic HPF ballast, lamp holder, prewired complete with all necessary accessories suitable for operation on 230V, 50Hz AC supply as required (Wipro WVP 45118 or Equi).	each	28		
16	Supply & installation of 1x18 watts recess mounted down light fixture, with aluminium reflector, CRCA sheet housing, complete with all accessories like ballast, 18W CFL lamp etc complete as required. (Wipro WCP 32118 SGW / Philips FBH150 M IxPL-C/4P 18W HFM 240V / GE CFL 1x18 BDN LH R (H) HF)	each	82		
17	Supply and fixing of 1x9W Bulk head luminaire with glass cover, powder coated MS wire guard, die-cast aluminium housing, etc complete with all accessories like 9W CFL lamp etc as required. (Philips FXC101 / GE GECPLI).	each	30		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
18	Supply and installation of 1x70W, integral flood light luminaire, single piece pressure die cast aluminium housing with epoxy polyester powder coating, toughened glass cover, IP65 and rectangular reflector for axially symmetrical wide beam distribution, SS toggles, prewired complete with all necessary accessories as required including 70W MH lamp. (Philips RVP339 1xMHNTD70W or equivalent).	each	10		
19	Supply of 250mm sweep, louvered ventilating fan suitable for single phase 230 volt, 50Hz AC supply complete with motor, capacitor, louvers/shutters and all accessories as required complete. (Make : Usha Crisp Air or Crompton Briskair or equivalent)	each	15		
20	Supply of 300mm sweep, metal blades with safety guard suitable for single phase 230 volt, 50Hz AC supply complete with motor, capacitor and all accessories as required complete. (Make : Usha Turbo or Crompton Transair or equivalent)	each	20		
21	Supply of 1200 mm sweep min three star rated ceiling fan complete with motor, double ball bearing, blades, canopy, 30 cm down rod and without speed regulator suitable for 230 V 50 HZ, AC supply confirms to IS 374/1979 as required complete. (Make Usha Technix or Crompton High Breeze Plus or equivalent).	each	171		
F	Telephone & Net working system				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
22	Supply, installation, testing & commissioning of 24 port Gigabit 10/100/1000 Mbps Unmanaged Switch, RoHS compliant with all required accessories.	each	4		
23	Supply, installation, testing & commissioning of 24 port fully loaded patch panel with cable manager and all required accessories.	each	8		
24	Supply & installation of Cat 6, 1m. Patch cord with all required accessories.	each	40		
25	Supply & installation of Cat 6, 2m. Patch cord with all required accessories.	each	40		
26	Supply and installation of 15 U wall mounted Network Rack made of steel, powder coated, front glass cover, with 2 Nos. of (5x5A) PDU's and cooling fans including all required accessories.	each	4		
27	Supply and laying of following pair 0.5 sqmm FR PVC insulated annealed copper conductor, jelly filled armoured telephone cable in surface / through pipe / underground including excavation and re-filling including all accessories as required.				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
27.1	10 pair	Rm	300		
27.2	20 pair	Rm	150		
27.3	50 pair	Rm	150		
28	Supply & drawing Cat 6E cable in the existing surface / recessed steel / PVC conduit including connection to outlet as required.	Rm	300		
29	Supplying and fixing modular RJ 45 socket on the existng modular plate & switch box including connections but excluding modular plate etc. as required.	each	32		
30	Supplying and fixing U-PVC Trunking type cable management system for Power, Data, Communication Cables/wires complete with cover plates, end caps, Internal & External angles, cable retainers, cable dividers, Tees, accessories etc as required. The same shall be suitable for fixing 6A, 16A Sockets, switches, RJ45, RJ-11 with its modular box & front plate etc. The CMS shall conform to BS:4678/ BS:4662 & corresponding BIS.				

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
30.1	100 x 50 mm	Rm	530		
31	Supply & installation of following modular type switches & sockets in the existng DLP trunking with all required accessories like modular box, front plate etc as required.				
31.1	6A socket with switch	each	260		
31.2	6/16A socket with switch	each	98		
32	Supplying and fixing following Telephone krone module in box made of plastic including hinged door, krone module with connection etc. as required.				
32.1	10 pair krone module	each	5		
32.2	20 pair krone module	each	3		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
32.3	50 pair krone module	each	1		
33	Supplying and fixing following rating, 415 volts, C curve MCB in the existing DB, enclosure complete with connections, testing and commissioning etc. as required.				
33.1	40A TP MCB	each	12		
33.2	63A FP MCB	each	10		
33.3	63A TP MCB	each	20		
33.4	100 A FP MCB	each	10		
G	Safety Equipments				
34	Supply and providing 6 mm thick & 1 m wide electrical grade chequered type rubber mat to withstand 3.3 KV dielectric strength conforming to IS 5429/ 1969.	Rm	30		

SI No	Description of Items	Unit	Quantity	Rate(in figures & words) Rs	Amount in Rs
35	Supply and providing 12 mm thick & 1 m wide electrical grade chequered type rubber mat to withstand 15 KV dielectric strength conforming to IS 5429/ 1969.	Rm	10		
36	Supply and providing 9 Litre capacity GI Fire Bucket painted in post office red with primer coat of red oxide and written with white paint 'FIRE' mounted on MS angle frame work/ wall bracket filled with fine sand, painting the bracket/ floor stand including making good the damages, colour washing etc. as required.	Each	2		
37	Supply and providing First Aid Chart duly framed and placed in a conspicuous location for clear vision.	Each	2		
38	Supply of 15" long rubber Hand gloves 15KV grade of approved make	Pair	2		
	Total Part IB -Electrical				