

**ESTABLISHMENT OF NON-COMMUNICABLE DISEASE AND GERIATRIC CARE FOR INDIAN INSTITUTE OF DIABETES  
AT PULAYANARKOTTA,TRIVANDRUM-PHASE II**

**PART II - ELECTRICAL WORKS**

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
<b>A. LT Wiring</b>					
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 recessed medium class PVC 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.				
1.1	Group C	point	455		
2	Wiring for twin control light point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed steel 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.	point	25		
3	Wiring for circuit/submain wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface medium class PVC conduit as required.				
3.1	2 x 1.5 sq.mm + 1 x 1.5 sq.mm earth wire	Rm	1375		
3.2	2 x 2.5 sq.mm + 1 x 2.5 sq mm earth wire	Rm	1985		
3.3	2 x 4.0 sq.mm + 1 x 4.0 sq mm earth wire	Rm	400		
4	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.				

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
4.1	20 mm	Rm	2150		
4.2	25 mm	Rm	1800		
4.3	32 mm	Rm	100		
5	Supplying and fixing metal box of size 250 x 300 x 100 mm deep (normal size) on surface or in recess with suitable size of phenolic laminated sheet cover in front including painting etc as required.	Each	10		
6	Supplying and drawing 2 pair 0.5 sq mm FRLS PVC insulated annealed copper conductor, unarmored telephone cable in the existing surface/ recessed steel/ PVC conduit as required.	Rm	1200		
7	Supplying and drawing co-axial TV cable RG-6 grade, 0.7mm 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	1100		
8	Supplying and fixing following modular socket outlet on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				
8.1	Telephone socket outlet	Each	35		
8.2	TV antenna socket outlet	Each	20		

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
9	Supplying and fixing stepped type electronic fan regulator-modular on the existing modular plate switch box including connections but excluding modular plate etc. as required.	Each	65		
10	Supply and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Each	80		
11	Supplying and fixing following size / modules, PVC box alongwith modular base & cover for modular telephone/ data sockets in recess / surface etc as required.				
11.1	1 or 2 module	Each	120		
12	Supplying and fixing suitable size PVC 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.	Each	240		
13	Supplying and fixing suitable size PVC 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.	Each	75		
14	Supplying and fixing 3 pin, 5 amp ceiling rose on the existing junction box/ wooden block including connection etc as required.	Each	35		
15	Supplying and fixing call bell / buzzer suitable for single phase, 230 volt, complete as required.	Each	10		
16	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, false ceiling with chain and hook including connection with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable and earthing etc. as required.	Each	155		

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
17	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 etc. as required.	Each	65		
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		
19	Supplying and fixing extra conduit down rod of 20 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	130		
20	Supplying and drawing UTP 4 pair CAT 6 LAN cable in the existing surface / recessed steel / PVC conduit as required.	Rm	1650		
	<b>B. MCBs, DBs and Cable Trays</b>				
21	Supplying and fixing following way surface / recess mounting vertical type, 415 volt, TPN MCB distribution board of steel sheet, 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 16kA 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.)				
21.1	8 way TP	Each	4		
22	Providing and fixing 100 amp 16 kA TP MCCB in existing cubicle panel board including drilling holes in cubicle panel, making connections etc as required.	Each	4		

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
23	Supplying and fixing following way prewired vertical type TP&N MCB distribution board of steel sheet for 415 volts on surface/ recess complete with loose wire box 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, terminal connectors for all incoming and outgoing circuits, duly prewired with adequate size of FRLS PVC insulated copper conductor upto the terminal connector/ neutral link, earthing etc as required (But without MCB/ RCCB/ Isolator). (Note : Prewired vertical type MCB TPDB is normally used where 3 phase outlets are required.)				
23.1	6way, Double door	Each	2		
23.1	4way, Double door	Each	1		
24	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 FRLS 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)				
24.1	4 way, Double door	Each	2		
24.2	6 way, Double door	Each	2		
24.3	8 way, Double door	Each	1		

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
25	Supplying and fixing following way prewired SP&N MCB distribution board of steel sheet for 240 volts on surface/ recess complete with loose wire box, terminal connectors for all incoming and outgoing circuits, duly prewired with suitable size FRLS 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)				
25.1	4 way, Double door	Each	1		
25.2	8 way, Double door	Each	2		
26	Supplying and fixing following rating, four pole, 415 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
26.1	40 amps	Each	2		
26.2	63 amps	Each	3		
27	Supplying and fixing following rating, double pole, 240 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
27.1	40 amps	Each	4		
28	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.				

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
	25 amps				
		Each	2		
28.1	40 amps				
		Each	2		
29	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.				
29.1	25 amps				
		Each	2		
29.2	40 amps				
		Each	2		
29.3	63 amps				
		Each	3		
30	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.				
30.1	Single pole				
		Each	70		
30.2	Triple pole				
		Each	12		

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
30.3	Triple pole and neutral	Each	6		
31	Supplying and fixing single pole blanking plate in the existing MCB DB complete as required.	Each	40		
32	Supply and fixing TP sheet steel enclosure on surface recess along with 16/25/32/ amps 415V "C" curve TP MCB complete with connections, testing and commissioning etc as required.	Each	10		
33	Supplying and fixing 20 amps, 240 volts, SPN industrial type, socket outlet, with 2 pole and earth, metal enclosed plug top alongwith 20 amps "C" curve, SP, MCB, 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.	Each	5		
34	Supplying and fixing 30 amps, 415 volts, TPN industrial type, socket outlet, with 4 pole and earth, metal enclosed plug top alongwith 30 amps "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.	Each	2		
35	Supply and installing 300mm x 50 mm depth x 1.6mm thick perforated GI cable trays with perforations not more than 17.5% in convenient sections, joined with connectors, GI suspenders including nuts and bolts, bends, tees etc as required	Rm	80		
<b>C. Earthing</b>					
36	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.	Each	6		
37	Earthing with GI 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.	Each	10		



SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
38	Supply and laying 25mm x 5mm copper strip at 0.5m 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 50mm).	Rm	50		
39	Supply and laying 25mm x 5mm GI strip at 0.5m 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 GI nut bolt & spring washer spaced 50mm).	Rm	140		
40	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	Rm	40		
41	Providing and fixing 25 mm X 5 mm GI strip on surface or in recess for connections etc. as required.	Rm	230		
42	Providing and fixing 8 SWG dia G.I. wire on surface or in recess for loop earthing as required.	Rm	450		
43	Providing and fixing 4 mm dia Cu wire on surface or in recess for loop earthing as required.	Rm	130		
<b>D. MV &amp; HV Cable laying and Termination</b>					
44	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.				
44.1	Upto 35 sq. mm	Rm	400		
44.2	Above 35 sq. mm and upto 95 sq. mm	Rm	10		

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
44.3	Above 95 sq. mm and upto 185 sq. mm	Rm	200		
45	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing HUME/RCC/METAL pipe as required.				
45.1	Upto 35 sq. mm	Rm	50		
45.2	Above 35 sq. mm and upto 95 sq. mm	Rm	10		
45.3	Above 95 sq. mm and upto 185 sq. mm	Rm	30		
46	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.				
46.1	Upto 35 sq. mm	Rm	20		
46.2	Above 35 sq. mm and upto 95 sq. mm	Rm	10		
46.3	Above 95 sq. mm and upto 185 sq. mm	Rm	30		
47	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.				
47.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	Rm	50		

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
47.2	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	Rm	50		
47.3	Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)	Rm	10		
48	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.				
48.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	Rm	300		
48.2	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	Rm	100		
48.3	Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)	Rm	50		
49	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	20		
50	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.				
50.1	Above 120 sq. mm and upto 400 sq. mm	Rm	210		
51	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.				

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
51.1	Above 120 sq. mm and upto 400 sq. mm	Rm	40		
52	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.				
52.1	Above 120 sq. mm and upto 400 sq. mm	Rm	50		
53	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.				
53.1	3.5 x 185 sqmm cable	Each	10		
53.2	3.5 x 120 sqmm cable	Each	4		
53.3	3.5 x 70 sqmm cable	Each	2		
53.4	3.5 x 50 sqmm cable	Each	10		
53.5	3.5 x 35 sqmm cable	Each	10		

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
53.6	3.5 x 25 sqmm cable	Each	4		
53.7	4 x 16 sqmm cable	Each	8		
53.8	4 x 10 sqmm cable	Each	16		
53.9	4 x 6 sqmm cable	Each	16		
54	Supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for 3 core, 150sqmm XLPE aluminium conductor cable of 11 KV grade as required :	Each	5		
55	Supplying and making outdoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for 3 core, 150sqmm XLPE aluminium conductor cable of 11 KV grade as required :	Each	1		
56	Providing, laying and fixing of 100mm dia G.I. pipe (medium class) in ground complete with G.I. fittings including trenching (75 cm deep) and re-filling etc as required	Rm	20		
57	Providing, laying and fixing of 150 mm 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.	Rm	40		
<b>E. 11 kV System</b>					

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
58	<b>Outdoor type HT panel</b>				
	Supply, installation, testing and commissioning of Outdoor HT Load break switch (LBS) with HT fuse, 3 panel unit, weatherproof, double door, floor mounted, fabricated with 2mm thick CRCA sheet suitably reinforced, powder coated, with segregated HT & LT compartment consisting of				
	<b>Incomer</b>				
	One no. 11 kV, 630A, TP, LBS, panel with suitably interlocked earth switch, having horizontal draw out and isolation. The LBS panel shall be provided with suitable rating HT fuse, seal off bushing. ON, OFF LED /mechanical indication lamp, emergency trip, safety shutter etc. The panel shall be provided with the required no. of auxiliary contacts.				
	<b>Outgoing</b>				
	Two nos. 11 kV, 630A, TP, LBS, panel with suitably interlocked earth switch, having horizontal draw out and isolation. The LBS panel shall be provided with suitable rating HT fuse, seal off bushing. ON, OFF LED /mechanical indication lamp, emergency trip, safety shutter etc. The panel shall be provided with the required no. of auxiliary contacts.				
	Components in each incomer and outgoing panels shall also include, but not limited to the following items.				
	1 no. Analogue volt meter scaled 0-15KV with selector switch				
	3 nos. Analogue ammeter scaled 0-50 A with selector switch				
	1 set On,Off, Trip indication lamp				
	1 set panel earth bus.				
	1 set Draw out type 3 limb, 11 kV/110V, 100VA, class 0.5, epoxy cast resin potential transformer with necessary HT & LT fuses for the panel metering				
	1 set Draw out type 3 limb, 11 kV/110V, 100VA, class 0.5, epoxy cast resin potential transformer with necessary HT & LT fuses exclusively for KSEB metering including enclosure for sealing facility.				
	1 set Epoxy resin cast CT with suitable ratio as per demand load, with 15VA, class 0.5 for panel metering.				
	1 set Epoxy resin cast CT with suitable ratio as per demand load, with 15VA, class 0.5 exclusively for KSEB metering including enclosure for sealing facility.				
	The panel shall have suitable enclosure for placing KSEB TOD metering with glass view panel, KSEB sealing facility etc as required.				
	1 set Test terminal block.				

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
	1 set 630A, 26.2kA, TP copper bus having a current density of 1.2A per sqmm duly sleeved with all accessories and insulators complete as required.				
	Required Danger boards, signages, lettering etc.				
	The panel shall be subjected to all routine tests as per IS/IEC standards. Type test certificate of identical panel shall be submitted.				
	The LBS & panel shall be provided with all necessary standard safety feature as per IS & door interlocks such as breaker cannot be drawn out when breaker is in ON position and similarly breaker cannot be closed unless it is fully in drawn in condition.				
	In addition to the above, 11kV HT panel shall be with all requirements as per the guidelines by Local E.B authorities and Electrical inspectorate.	Each	1		
59	<b>Outdoor type Unitised Substation</b>				
	Supply, erection, testing and commissioning of 250 kVA outdoor type unitised substation (USS), 11 kV / 433 V, 3 phase, Vector DYn-11, Copper wound, resin cast transformer with off circuit tap changer from +5% to -10 % in steps of 2.5 %. The HV side shall be connected to HTSFU and LV cable box with 400A FP MCCB thermal magnetic with OL, SC protection and suitable for connecting 2 runs 3.5C x 185sqmm XLPE Aluminium cable. The transformer shall be provided with O/C and E/F protection on HV side, winding temperature indicator and all other standard fittings and accessories conforming to IS 11171/85 and IS2026/1975. The low set earth fault relay with neutral CT 75/5A, class 5P10, 10VA shall be provided.				
	All the equipments shall be mounted on a common galvanised GI base with fabricated enclosure painted with outdoor type rust proof paint / powder coated. The wall of the enclosure shall be detachable type with louvers for natural cooling The busbars inside the cubicle shall be sleeved using heat shrinkable sleeves.				
	The HV side of the USS shall be provided with 11kV, 26.2kA, 630A, load break switch with earth switch. The HT HRC fuse, seal off bushing, 230V shunt trip coil, space heater with thermostat, 400A Aluminium busbar with support insulator shall be provided. (Make: Crompton Greaves / Intrans / Megawin / Unipower).	Job	1		
<b>F. DG set</b>					

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
60	Supply, Installation, Testing and Commissioning of 200 KVA, silent type, water cooled, radiator type, four stroke, electric start D.G Set with acoustic enclosure and standard control panel. The engine shall be capable of taking 10% overload for one hour after 12 hours of continuous operation. The DG shall be suitable for AMF operation. The alternator shall be brushless, self excited, self regulated, SPDP enclosure, class F/H insulation, suitable for continuous operation at 1500 rpm, generating 415 V +/- 5% at 0.8 p.f, 50Hz, 0.85 load factor, 3 phase, 4 wire system generally conforming to BS: 2613 & IS: 4722. The neutral of the DG set shall be provided with low set earth fault relay using 60/5A 5P10 10VA CT in the neutral earthing conductor .				
	The DG set shall be provided with control panel inside the acoustic enclosure with 320A FP thermal magnetic MCCB, RYB indication lamp, energymeter, Current Transformer, low set earth fault relay etc.				
	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, 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.	Job	1		
61	Supply & installation of exhaust gas piping of suitable diameter for 200 kVA DG set as per manufactures standard welded black MS, B class pipe confirming to IS:3589 cut to required lengths and installed with necessary bends, supports and clamps, anti- vibration mountings, insulation of exhaust system with mineral wool / Rockwool, 50mm thick wire mesh & aluminum cladding etc.	Rm	15		
62	Supply, Installation, Testing & Commissioning of cubicle type AMF panel board, 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.				
	<b>Incomer</b>				
	1 no. 400A, 35kA, TP+NL MCCB having isolation duty with E/F release, adjustable thermal magnetic release for O/L & SC protection.				
	1 no. 320A, 35kA, TP+NL MCCB having isolation duty with E/F release, adjustable thermal magnetic release for O/L & SC protection.				



SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
	2 nos. 400A, FP, AC3 duty Power Contactor.				
	Electrical & mechanical interlock between the incomers.				
	<b>Busbar</b>				
	1 Set of 450 Amp TPN busbars of high conductivity electrolytic quality Aluminium alloy.				
	<b>Instruments</b>				
	2 No 3 phase Digital Multi function meter to read V, A, F with Acc class 1.				
	2 Set of phase indicating lamps, LED type, RYB				
	1 Set of indicating lamps for Main On, DG On, Load on DG etc.				
	2 Set of 2A 10kA C curve SP control MCB				
	1 Set of 400/5A, Class 1.0, 10VA, Cast Resin CT for metering.				
	1 Set of 320/5A, Class 1.0, 10VA, Cast Resin CT for metering.				
	1 set microprocessor based AMF control relay with all protective features for the starting and stopping of the DG set automatically.				
	1 set Auto / manual, test, off selector switch.				
	1 set SMPS based battery charger with inbuilt auto/manual current & float/boost facility adjustment with DC Volt meter & Ammeter(separate)				
	The panel shall be with all required accessories & control wiring for AMF operation.	Job	1		
<b>G. LT Panel Board and Accessories</b>					
63	Supply, Installation, Testing & Commissioning of cubicle type Main MV panel board, 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.				
	<b>Incomer</b>				
	1 no. 400A, 35kA, TP+NL MCCB having isolation duty with E/F release, adjustable thermal magnetic release for O/L & SC protection.				
	<b>Busbar</b>				
	1 Set of 450 Amp TPN busbars of high conductivity electrolytic quality Aluminium alloy.				

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
	<b>Instruments</b>				
	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 400/5A, Class 1.0, 10VA, Cast Resin CT for metering.				
	1 Set of 400/5A, Class 1.0, 10VA, Cast Resin CT for APFC relay.				
	3 nos Ammeter (0-400A), Acc class 1 with 240 deg., defl. Scale.				
	<b>Outgoing</b>				
	1 nos. 125A, 25kA, TP+NL MCCB having isolation duty with E/F release, adjustable thermal magnetic release for O/L & SC protection.				
	4 nos. 100A, 25kA, TP+NL MCCB having isolation duty with E/F release, adjustable thermal magnetic release for O/L & SC protection.				
	5 nos. 63A, 25kA, TP+NL MCCB having isolation duty with E/F release, adjustable thermal magnetic release for O/L & SC protection.	Job	1		
64	Supply, Installation, Testing & Commissioning of 60kVAR 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.				
	<b>Incomer</b>				
	1 nos. 125A, 25kA, TP+NL MCCB having isolation duty with E/F release, adjustable thermal magnetic release for O/L & SC protection.				
	<b>Busbar</b>				
	1 Set of 150 Amp TPN busbars of high conductivity electrolytic quality Aluminium alloy.				
	<b>Instruments</b>				
	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	Unit	Qty	Rate Rs in figures & words	Amount in Rs
	1 Set of 125/5A, Class 1.0, 10VA, Cast Resin CT for metering.				
	1 no. 6 stage microprocessor based APFC relay				
	5 set On, Off push button				
	5 set On, Off LED type indication lamp				
	1 set Auto / manual selector switch.				
	<b>Outgoing</b>				
	3 Nos 40A, TPN, C curve MCB.				
	2 Nos 32A, TPN, C curve MCB.				
	2 Nos. 15 kVAR MPP heavy duty capacitor with capacitor duty contactor.				
	1 Nos. 10 kVAR MPP heavy duty capacitor with capacitor duty contactor.				
	1 Nos. 5 kVAR MPP heavy duty capacitor with capacitor duty contactor.				
	1 No. 15 kVAR MPP heavy duty capacitor directly connected.	Each	1		
	<b>H. HT &amp; LT Cables</b>				
65	Supply of 11kV, 3C 150sqmm (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 relevant standard.	Rm	300		
66	Supply of the following size 1.1kV grade XLPE insulated PVC sheathed, armoured Aluminium conductor power cable confirming to IS 7098 (part 1) ammended upto date.				
66.1	3.5 x 185 sqmm cable	Rm	140		
66.2	3.5 x 120 sqmm cable	Rm	110		
66.3	3.5 x 70 sqmm cable	Rm	30		

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
66.4	3.5 x 50 sqmm cable	Rm	120		
66.5	3.5 x 35 sqmm cable	Rm	100		
66.6	3.5 x 25 sqmm cable	Rm	120		
66.7	4 x 16 sqmm cable	Rm	140		
66.8	4 x 10 sqmm cable	Rm	160		
66.9	4 x 6 sqmm cable	Rm	280		
<b>I. Light Fixtures</b>					
67	Supply of 1x28 watts surface mounted luminaire, CRCA powder coated housing, without reflector, pre-wired complete with all accessories like electronic ballast, 28W T5 lamp etc complete as required. (Philips TMS 122 M lxTL5-28W EBE / Bajaj BTIR 128 / Crompton T5JB1328REB).	Each	65		
68	Supply of 1x28 watts fluroscent tube fitting sleek with decorative end cap, powder coated CRCA steel channel complete with all electrical accessories like electronic ballast, lamp holder, 28W T5 lamp etc complete as required. (Philips TMS 540 HF / Bajaj BTER 128 / Crompton T5GP28EBS9).	Each	45		

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
69	Supply of 2x18 watts surface mounted decorative luminaire, powder coated CRCA housing, paralite louver, complete with all accessories like electronic ballast, 18W CFL lamp etc complete as required.(Crompton TLE218EB/P5 / BSMLA 01 218 WEBS / Equi)	Each	20		
70	Supply of 1x14 watts fluroscnt tube fitting sleek with decorative end cap, powder coated CRCA steel channel complete with all electrical accessories like electronic ballast, lamp holder, 14W T5 lamp etc complete as required. (Philips MiroIta Slim 18W HF / Bajaj BTER 114 / GE LMS 14 D / Crompton T5JB13114EB).	Each	25		
71	Supply and installation of 4x14W recess mounted light luminaire, with mirror optic luminaire, powder coated CRCA housing complete with all electrical accessories like electronic ballast, lamp holder, 14W T5 lamp, mounting chain, hook etc complete as required. (Philips TBS869 4xTL 5-14W EBP D8 / Crompton T5CQS11414EBB / Bajaj BTMRA 414V2)	Each	25		
72	Supply & installation of recess mounted LED down light fixture, with aluminium reflector, diffuser etc complete with all accessories like driver, LED lamp etc complete as required. (Philips BBS 170 1xDLED-5000PSU WH / Crompton LCDD-15-CDL / Bajaj BZSLO 15W WH)	Each	125		
73	Supply of ceiling fan 1200 mm sweep, double ball bearing, approved colour and quality with original down rod,suspension shackle,canopy etc with out regulator complete with all accessories as required. ( Usha Sonata max / Crompton High Breeze)	Each	65		
74	Supply and installation of 400 mm sweep, wall fan, swinging type with speed control, necessary adapter, of approved colour, for single phase 230 volt, 50Hz AC supply complete with motor, capacitor all accessories as required complete. (Usha Helix High speed or Equi).	Each	5		
75	Supply of heavy duty exhaust fan 300 mm sweep, 900 rpm, metal blades of approved colour, for single phase 230 volt, 50Hz AC supply complete with motor, capacitor and all accessories as required complete.	Each	35		

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
76	Supply and installation of bollard with all required accessories like lamp, control gear etc as required.(Philips FGC100 lxPLS9W / Crompton CFLBM 20BC / Bajaj BJBOL 03 29 CFL)	Each	15		
<b>J. UPS &amp; MCBs</b>					
77	Supply, installation, testing & commissioning of 10 kVA, 3 phase, input, 1 phase output, true on-line UPS system with 20 minutes back up (full load), including all accessories, Tubular 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				
	Auto temperature compensation	Each	1		
78	Supplying and fixing following rating, 415 Volts, "C" series, miniature circuit breaker suitable for power loads of following poles in the existing MCB DB complete with connections, testing and commissioning etc as required.				
78.1	40A TP MCB	Each	2		
78.2	63A TP MCB	Each	4		
78.3	63A DP MCB	Each	1		

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
79	Supply and fixing FP sheet steel enclosure on surface recess along with 63 amps 415V FP MCB complete with connections, testing and commissioning etc as required.	Each	4		
<b>K. External lighting</b>					
80	Supply & installation of Hot dipped Galvanised (internally and externally), seamless, octagonal pole of overall length 6 M with single arm bracket of 1.5m length 48mm dia x 3.25mm thick with standard arm cap. The pole shall have inbuilt cable loop in loop out with flush door and locking facility. The bottom dia of the pole shall be 135mm and top 70mm with 3mm sheet thickness. The pole shall be with base plate of 225x225x16mm and 4nos required size of foundation bolt. The pole shall be mounted on suitable size foundation (design to be got approved) with baseplate arrangement and provided with 4A SP C curve MCB, loop in loop out terminals block, required dia GI / PVC pipe shall be provided in the foundation for taking cable in & out from the pole, 3Cx1.5sqmm unarmoured PVC insulated round copper cable from loop in loop out to light fixture etc with all required accessories. The cost of the civil foundation is not considered in this item.	Each	10		
81	Supply, installation, testing & commissioning of IP65,70W MH street lighting, with die cast aluminium housing, POT optics reflector, toughened glass, stainless steel toggle, heavy duty copper ballast, pf capacitor, 1x70W MH lamp etc as required. The light fitting shall be suitably installed with all required accessories to poles. The item shall include 3C x 1.5 sqmm PVC insulated copper unarmoured cable for connecting between the luminaire and the loop in loop out box. (Similar to Wipro WST 71150 or Philips CRP 320 lxCDMTT70W FG GR / Crompton SSGUN11071H/G / Bajaj BGJRL 70 SV CG PDC complete)	Each	10		
82	Supply and installation of IP65,150W MH integral flood light luminaire, with die cast aluminium housing, aluminium reflector, toughened glass, stainless steel toggle, heavy duty copper ballast, pf capacitor, 1x150W MH lamp etc as required. The light fitting shall be suitably installed in ground above concrete foundation with all required accessories. The item shall include 3C x 1.5 sqmm PVC insulated copper unarmoured cable for connecting between the luminaire and the junction box. (Similar to Philips MWF231 lxMHNTD-150W S / Crompton FADT1115IH09 / Bajaj BJFL 11 150 MH DE WS II).	Each	4		

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
83	Supply & installation of Post top luminaire with 2x18W CFL, with cast iron spigot, spun aluminium funnel shap with clear acrylic cover, light opening on canopy with baffles and accessories, 18W CFL lamp. The light fitting shall be mounted on 3mtr length pole, pole base, with all necessary accessories including lamp. The cost of the civil foundation shall be measured along with civil items (Bajaj BJGLI 218 clear or Equi)	Each	10		
84	Supply, Installation, Testing & Commissioning of Street lighting panel, cubicle type, made out of 2mm thick CRCA sheet, totally enclosed, free standing, floor mounting, dust and vermin proof, powder coated, outdoor type, compartmentalised, double door suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system, including internal wiring with suitable size wires, rotary handle, spreaders, 3mm thick gland plate, hinged type door with neoprene gasket etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.				
	<b>Incomer</b>				
	63A, TPN, switch disconnector unit (Isolator), AC23, 415V, 50Hz, complete with handle assembly having door interlock - 1 no.				
	<b>Busbar</b>				
	1 Set of 100 A TPN busbars of high conductivity electrolytic quality Aluminium alloy.				
	<b>Instruments</b>				
	2A, C curve SP MCB - 3 nos.				
	RYB indication lamp, LED type - 3 nos.				
	1 No 3 phase Digital Multi function meter to read V, A, F Acc class 1.				
	60/5A 5VA class 1 resin cast CT - 1 set				
	<b>Outgoing.</b>				
	25A TP+NL C curve MCB - 4 nos.				
	32A AC1 duty 4P Power contactor - 4 nos.				
	24Hr Timer with all accessories - 2 nos.	Each	1		
<b>L. Telephone &amp; Network system</b>					



SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
85	Supply and laying 50 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.	Rm	50		
86	Supply and laying 20 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.	Rm	50		
87	Supply and Installation of 50 pair MDF box, back mount frame and original krone connectors with all accessories.	Each	1		
88	Supply and Installation of 20 pair MDF box, back mount frame and original krone connectors with all accessories.	Each	2		
89	Supply & fixing modular type computer outlet (RJ-45) with modular base and cover plate, GI box complete with all accessories, connection etc. complete as required.	Each	30		
90	Supply, installation, testing & commissioning of 24 port unmanaged Gigabit 10/100/1000 Mbps Unmanaged Switch, RoHS compliant with all required accessories.	Each	2		
91	Supply and installation of 6-24 port fully loaded 110 connect jack panel 1U with cable manager and all required accessories.	Each	2		
92	Supply & installation of Cat 6, 4ft, RJ45-RJ45, UTP, Patch cord with all required accessories.	Each	15		

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
93	Supply & installation of Cat 6, 7ft, RJ45-RJ45, UTP, Patch cord with all required accessories.	Each	15		
94	Supply and installation of 9 U wall mounted Network Rack made of steel, powder coated, front glass cover with PDU's, cable manager and cooling fans including all required accessories.	nos	1		
<b>M. Miscellaneous</b>					
95	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	15		
96	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	6		
97	Supply, fabrication and fixing 3 nos MS Fire buckets on suitable fabricated MS angle iron stand with hook, painting with red paint & filled with dry sand as required with all required accessories.	Set	1		
98	Supply and providing First Aid Chart duly framed and placed in a conspicuous location for clear vision.	Each	1		
99	Supply and providing Electrical main single line Diagram duly framed and placed in a conspicuous location for clear vision.	Each	1		

SI No	Description	Unit	Qty	Rate Rs in figures & words	Amount in Rs
100	Preparation of electrical drawing for the building, submission of drawings to Electrical inspectorate and obtaining approval, arranging inspection for entire installation and other utilities, obtaining road cutting permission obtaining sanction orders for the electrical installation. Necessary power allocation, service connection, energising the installation from KSEB complete. Including all incidental expenses except the fees payable to the electrical inspectorete with valid receipts from the authorities.	Job	1		
	<b>TOTAL PART II - ELECTRICAL WORKS</b>				