

**ELECTRIFICATION OF 1<sup>st</sup> AND 2<sup>nd</sup> FLOOR OF BLOCK NO. 4 AT COLLEGE OF ENGINEERING, THALASSERY**

Sl.No.	Item Specification	Qty.	Unit	Rate	Amount
<b>1</b>	<b>DBs</b>				
A	Supply and installation of sheet steel, phosphatised and painted, dust and vermin proof enclosure of DB including copper /brass bus bar, neutral link, earth bus and DIN rail suitable for fixing MCB/ isolator etc. fixed on wall using suitable anchor bolts or fixed in recess including cutting hole on the wall , making good the damages, colour washing etc. as required.				
1	6 Way(8+18) TPNDDB - Three phase double cover (IP 42/43) -	9	Nos	4039	36351
2	8 way (8+24) - double cover TPN vertical DB with provision for fixing 4P MCB / Isolator/ RCCB/ RCBO as incomer and SP/ TP MCB as outgoing (IP 42/43)	2	Nos	9677	19354
3	FP enclosure for independent mounting of MCB/Isolator	12	Nos	604	7248
4	DP enclosure for independent mounting of MCB/Isolator	3	Nos	486	1458
<b>2</b>	<b>DB Accessories</b>				
B	Supply and installation of the following accessories suitable for 50 Hz , AC supply conforming to IS 8828-1995/ IEC 60898 of the following current ratings in the existing enclosure and giving connections as required				
a	63 A FP MCB Isolator	2	Nos	752	1504
b	40A FP MCB Isolator	3	Nos	716	2148
c	32A FP MCB Isolator	17	Nos	618	10506
d	25A 2P MCB Isolator	3	Nos	342	1026
e	25A 4 Pole 30mA RCCB	4	Nos	2744	10976
f	32A 4 Pole 30mA RCCB	2	Nos	2357	4714
g	63A 4 Pole 100mA RCCB	2	Nos	3306	6612
h	6A to 32 A 10kA SP MCB (C curve)	168	Nos	219	36792
i	25A to 32A 10kA TP MCB (C curve)	14	Nos	919	12866
<b>3</b>	<b>MV CABLES - SUPPLY AND LAYING</b>				
A	Supply ,laying and clamping of 1 no XLPE insulated and PVC sheathed armoured aluminium power cable 1.1 KV grade of the following size using clamps noted along with the cables spacing of clamps not exceeding 60cms ,making good the damages ,colour washing etc as required				
a	3.5 core 35 sq mm	40	mtr	316	12640
b	4 core 6 sq mm	260	mtr	186	48360
<b>4</b>	<b>MV CABLES - END TERMINATIONS</b>				
A	Supplying and installtion of seimens/tropodur type nickel palted single compression brass cable gland for the following sqmm PVC insulated and PVC sheathed armoured aluminum/ copper conductor cable 1.1KV grade and making end termination suitable for 2/3/3.5/4 core cable of the following sizes as required including earth clamps for siemens /tropodur type cable glands for suitable length and other dimensions noted along with each size of glands for the for 16 sq.mm with 12mm wide x 1 mm thick clip and including superior quality aluminium tubular cable socket and making core termination of cable of the following sizes including crimping etc .as required				
a	35 sq mm	4	nos	469	1876
b	6 sq mm	12	nos	252	3024
<b>5</b>	<b>EARTHING</b>				

a	Supply and providing pipe earthing as per IS 3043 with 3.60 m long 40 mm dia B class GI pipe, GI funnel with weld mesh, filling required quantity of charcoal & salt including construction of inspection chamber with a bed concrete of 1:4:8 PCC using 40 mm broken stone (10 cm thick), brick work in cement mortar 1:6, plastering the surface of brick masonry and the exposed surface of PCC bed with cement mortar 1:4, 12 mm thick, (the finished inside dimension shall be 300 x 300 x 300 mm) but excluding test joint, earth continuity conductor to the plate, and covering at the top. (in hard soil) <b>(3 Nos for UPS and 4 Nos for Lighting Protection )</b>	7	No	3235	22645
b	Supply and providing the 450 x 450 x 10 mm of cast iron gully trap with covering at the top of the inspection chamber of earth pit as required	7	nos	1195	8365
c	Supply and providing test joint for the earthing system using 2 Nos of the 2 x 25 x 3 mm tinned copper strip of strips including cutting and bending to shape, drilling necessary holes and fixed to the watering pipe etc as required.	10	mtr	681	6810
d	Supply and providing earth lead from the test joint to the earth electrode using the 4.00 mm bare copper conductor (8 SWG) of conductors/ strips including cutting, drilling necessary holes (in case of strip) and fixing firmly with plate test joint etc as required.	75	mtr	100	7500
<b>6</b>	Supply and drawing bare earthing conductors of the following sizes along with wiring/ cables and giving connection as required.				
A	3.15 mm copper conductor (10 SWG)	500	mtr	70	35000
B	4.00 mm copper conductor (8 SWG)	100	mtr	109	10900
C	Supply and laying strips of the 25 x 3 mm copper strip tinned at the points of contacts along with wiring/ cables and giving connection as required.	30	mtr	568	17040
h	Supply and laying the 25 x 3 mm copper strip tinned at the points of contacts of strips laid 0.60 m below ground level including excavating trench of suitable size and refilling etc. as required (in ordinary soil).	10	mtr	632	6320
<b>7</b>	<b>LIGHTNING PROTECTION</b>				
a	Supply and clamping the following sizes of strips on surface of wall/ parapet/ existing cable tray using clamps fabricated from 20 x 3 mm GI flat duly painted or heavy duty GI spacer saddles, spacing of clamps not exceeding 1m, making good the damages, colour washing etc. as required (for horizontal run).				
	25 x 3 mm aluminium strip	150	Mts	141	21150
b	Supply and clamping the following sizes of strips on surface of wall/ parapet/ existing cable tray using clamps fabricated from 20 x 3 mm GI flat duly painted or heavy duty GI spacer saddles, spacing of clamps not exceeding 1m, making good the damages, colour washing etc. as required (for vertical run).				
	25 x 3 mm aluminium strip	150	Mts	173	25950
c	Providing and fixing testing joint made of 2 no. strips as mentioned below of the following sizes provided on either side of the conductors with 4 nos of GI bolts, nuts check nuts and spring washers etc. complete as required (for down conductors).				
	2 Nos 25 x 3 mm lead strip 150mm long	7	Nos	568	3976
d	Supply and laying the 25x6 mm GI strip of strips laid 0.60 m below ground level including excavating trench of suitable size and refilling etc. as required .	300	mts	211	63300
<b>8</b>	<b>SUB MAIN WIRING</b>				
	Supply and drawing 650/1100 V grade PVC insulated stranded single core copper conductor FRLS cables conforming to IS 694 part I 1990 in the existing surface / recess conduit as required including giving necessary connections of the following sizes.				
a	1.50 sq mm 3 run(R/Y/B/BLACK/GREEN)	2000	m	100	200000

b	2.50 sq mm 2 run+2.50 sqmm green Cu wire (Mains+ Power plug)	750	m	137	102750
c	4sq mm 2 run + 2.5 Sq.mm green Cu wire	300	m	205	61500
d	6 sq.mm 4 run + 2.5 sq.mm green Cu	160	M	309	49440
<b>9</b>	<b>PVC CONDUITS AND ACCESSORIES</b>				
<b>A</b>	Supply and fixing the following sizes of medium gauge PVC Conduit conforming to IS 9537/1983 part III along with all required accessories on surface including making good the damages etc as required				
a	20 mm	5	m	87	435
b	25 mm	10	m	99	990
c	Supplying and clamping the 50 mm dia of corrugated PVC flexible conduit with necessary compression gland with locking ring and check nut at termination pointed using suitable size GI / painted MS saddles spacing not exceeding 60 cms on surface including making good the damages, colour washing etc. as required.	25	m	156	3900
<b>B</b>	Supply and laying <i>medium gauge PVC conduit</i> conforming to IS 9537/1983 Part III n roof slab, jointing the pipes with PVC solvent cement, tying & fixing the conduit firmly with the re-inforcement etc. as required.				
a	20 mm	100	m	41.00	4100
b	25 mm	100	m	49.00	4900
c	32 mm	100	m	69.00	6900
<b>C</b>	Supply and fixing the following <i>normal size PVC accessories</i> conforming to IS 3419/1988 along with the PVC conduits laid in concrete				
a	20 mm one way terminal junction box	20	E	39.00	780
b	20 mm two way through junction box	20	E	40.00	800
c	20 mm two way angle junction box	20	E	40.00	800
d	20 mm three way tee junction box	20	E	43.00	860
e	20 mm four way intersection junction box	20	E	44.00	880
f	25 mm one way terminal junction box	20	E	44.00	880
g	25 mm two way through junction box	20	E	45.00	900
h	25 mm two way angle junction box	20	E	45.00	900
i	25 mm three way tee junction box	20	E	48.00	960
j	25 mm four way intersection junction box	20	E	50.00	1000
<b>D</b>	Supply and fixing the following <i>deep PVC accessories</i> conforming to IS 3419/1988 along with the PVC conduits laid in concrete				
a	20 mm one way terminal junction box	25	E	50.00	1250
b	20 mm two way through junction box	25	E	51.00	1275
c	20 mm two way angle junction box	25	E	51.00	1275
d	20 mm three way tee junction box	25	E	52.00	1300
e	20 mm four way intersection junction box	25	E	55.00	1375
<b>E</b>	Supply and fixing the following sizes of <i>PVC Conduit</i> conforming to IS 9537 / 1983 part III along with all required accessories <i>in recess</i> including cutting the wall and making good the damages etc as required.				
a	20 mm dia light gauge	1200	m	94.00	112800
b	25 mm dia light gauge	800	m	107.00	85600
c	32 mm dia light gauge	83.095	m	130.00	10802
<b>10</b>	<b>TELEPHONE AND COMPUTER POINTS</b>				
<b>A</b>	Supplying & Drawing unarmored PVC insulated and & PVC sheathed copper conductor Telephone Pair Cable conforming to ITD specification for indoor application through the existing conduit				
a	2 Pair 0.5MM ATC	200	m	35	7000
b	4 Pair 0.5MM ATC	257.19	m	50	12859.5
<b>B</b>	Supply and installation of RJ11 telephone socket in company made enclosure MS box, front plate switch socket ect.	6	nos	75	450

C	Supply and installation of telephone junction box with chrome connector with 2 bar .	2	No	1327	2654
D	Supply and installation of 2nos 6A 3 pin sockets controlled by 1 no16A SP control switch in single company made surface box with front and inner plate etc complete in position and giving connection. (For computers outlets)	37	nos	1372	50764
<b>11</b>	<b>SOCKET OUTLETS</b>				
A	Supply and installation of 5/6A 3 pin plug point in independent position with control switch including wire interconnection earth wires modular type MS box, front plate switch socket ect .	46	nos	694	31924
B	Supply and installation of 5/6A 3 pin plug point in independent position with control switch including wire interconnection earth wires modular type MS box, front plate switch socket ect . (from UPS DB)	37	nos	694	25678
C	Supply and installation of 16A 3 pin plug point in with 16A control switch in company made metal box.	20	nos	1155	23100
D	Supply and fixing SP & N/TP & N metal case enclosure with 2/4 pole and earth plug socket with pin suitable for incorporating , DP/4P MCB (excluding cost of DP/4P MCB) in surface/ recess including giving necessary connections, making good the damages etc. as required.				
1	250V, 25A/32A, 2 pole and earth	3	nos	1376	4128
2	25A DPMCB (C Curve)	3	nos	872	2616
E	Supply & Fixing the following types/ sizes of boxes suitable for modular accessories in surface/ recess including making good the damages, colour washing etc as required (Group B)				
a	2 module metal box in recess	25	nos	141	3525
b	3 module metal box in recess	25	nos	148	3700
c	4 module metal box in recess	25	nos	161	4025
d	5 module metal box in recess	25	nos	165	4125
e	6 module metal box in recess	25	nos	204	5100
f	8 module metal box in recess	25	nos	232	5800
g	9 module metal box in recess	25	nos	259	6475
h	10 module metal box in recess	25	nos	254	6350
i	12 module metal box in recess	25	nos	316	7900
F	Supply & Fixing the following types/ sizes of front plates on the existing modular boxes. (Group B)				
a	2 module white/ off-white	25	nos	96	2400
b	3 module white/ off-white	25	nos	109	2725
c	4 module white/ off-white	25	nos	120	3000
d	5 module white/ off-white	25	nos	137	3425
e	6 module white/ off-white	25	nos	165	4125
f	8 module white/ off-white	25	nos	210	5250
g	9 module white/ off-white	25	nos	243	6075
h	10 module white/ off-white	25	nos	267	6675
i	12 module white/ off-white	25	nos	273	6825
J	Supply and Fixing the following modular switches & accessories in the existing front plates and giving necessary connections as required (Group B)				
a	6A SP One way Switch with indicator	10	nos	113	1130
b	16A SP One way switch with indicator	10	nos	133	1330
c	6A Universal Socket	10	nos	168	1680
e	6/16A Universal Socket	10	nos	236	2360
f	blank plates 1M	10	nos	25	250
g	blank plates 2M	10	nos	40	400
h	blank plates 4M	10	nos	33	330
<b>12</b>	<b>LIGHT POINT WIRING</b>				

A	Supply and wiring points according to IS 732-1989 using rigid PVC conduit of minimum size 20 mm with specials conforming to IS 9537 part III 1983 and with suitable size specials conforming to IS 3419-1988, fixing the conduit using metal saddles spacing not exceeding 50 cm or concealed suitably and with 1.00 sq mm PVC insulated stranded single core copper conductor cable 650V grade, and continuous earthing with 1.5 Sq.mm green coloured FR PVC insulated stranded single core copper conductor cable 650V grade, generally conforming to IS 694-1990 complete with suitable size modular type metal switch boxes, modular type front plates (white or off white) etc. up to and including 6 A modular type SP switches and making good the surface of wall, colour washing etc. complete. All the terminations in the switch boards and DB's shall be tinned and the wires shall be drawn and fixed along the periphery of the box using suitable ties, tie mounts etc as required. (Group B modular accessories) Medium point rates				
a	Single control light point with 6A, 3 plate ceiling rose (Including T5 tubes, Exhaust fan etc)	184	nos	975	179400
b	Single control light point without ceiling rose (Battern, Bulk head & Wall light)	42	nos	933	39186
c	Twin control light point without ceiling rose (Battern light stair case)	2	nos	1510	3020
d	Single control ceiling fan point with 6 A, 3 plate ceiling rose & with socket size stepped electronic regulator.	117	nos	1629	190593
e	Call bell point with piano type 6 A bell push at one end and 6 A, 3 plate ceiling rose at other end	2	nos	1075	2150
f	Combined plug point with 6 A, 5 pin plug socket controlled by 6 A switch in the same switch board as that of light points.	32	nos	770	24640
<b>13</b>	<b>CARRIAGE &amp; ERECETION OF LIGHT AND FAN</b>				
A	Supply conveyance, installation, testing and commissioning the following types of fluorescent light fittings with all accessories and fluorescent lamps directly on wall and giving connections with 16/0.20 mm 3 core PVC insulated and sheathed round copper conductor flex wire or extending the original wiring and giving connections as required				
	Fluorescent tube light fitting with lamp holder, electronic ballast suitable for continuous operation with THD <10% duly wired up for use on 230 V AC supply . The fittings shall be made from CRCA MS sheet of minimum thickness 0.50 mm nominal thickness inside & outside.				
a	Suitable for single 28 W T5 lamp	15	nos	1446	21690
B	Supply, conveyance, installation, testing and commissioning of pre-wired fluorescent fittings of the following types complete with all accessories and fluorescent lamps etc. including supplying and fixing ball and socket arrangements on T.W round block, suspension down rod of 19mm dia MS conduit up to 2x60cm length including painting and wiring the down rod with 16/0.20mm 3 core round copper conductor flex wire conforming to relevant ISS or extending the original wiring and giving connections etc. a required.				
	Fluorescent tube light fitting with bi-directional reflector complete with lamp holder, APF electronic ballast suitable for continuous operation with THD <10%, power factor >0.98, RoHS compliant, duly wired up for use on 230 V AC supply without fluorescent tubes. The fittings shall be made from CRCA MS sheet of minimum thickness 0.50 mm nominal thickness inside & outside.				
a	Suitable for single 28 W T5 lamp	168	nos	2079	349272
C	Supply and installation of Battern and holder including cost of 15W CFL luminaire and giving connection.	14	nos	350	4900

D	Supply and fixing cast aluminium elliptical shaped bulk head fitting with front clear glass and mesh guard suitable for 5 to 14 W CFL to wall / ceiling including giving connections with required length of 16/0.20mm PVC insulated and PVC sheathed 3 core round copper conductor flex wire conforming to relevant ISS or extending the original wiring and making good the surface as required.including cost of 15W CFL	10	nos	848	8480
E	Supply and installation of suitable size MS rod type fan clamp using M10 fastner on ceiling as per IS 732 as required.	117	nos	196	22932
F	Supply and providing every additional length of down rod of suitable size heavy gauge GI / WI pipe with 16/0.20mm PVC insulated and PVC sheathed 3 core round copper conductor flex wire conforming in relevant ISS or with original wiring extended including painting as required.	75	MTR	127	9525
G	Supply, conveyance, installation, testing and commissioning of ceiling fans of the 1200 mm sweep (Category B)- 5 star ratedusing standard accessories excluding resistance type regulator, wiring the down rod with 16/0.20mm PVC insulated and PVC sheathed 650/1100V grade 3 core round copper conductor flex wire or with extended original wiring etc. as required.	117	nos	2452	286884
H	Charges for cutting holes suitable for accommodating exhaust fans of sizes exceeding 305 mm sweep up to 450 mm including plastering, colour washing etc. as required.	16	nos	371	5936
I	Supply, conveyance, installation, testing and commissioning of the 450 mm, single phase, heavy duty, 900 rpm exhaust fan in metal frame of exhaust fans in the existing opening, fixing necessary bolt and nuts, making good the damages etc. as required including giving connections with required length of 24/0.20mm PVC insulated and PVC sheathed 3 core round copper conductor flex wire conforming to relevant ISS.	16	nos	5143	82288
J	Supply, conveyance, installation, testing and commissioning of single piece integral luminaire suitable for roadway installation with die-cast aluminium housing with top opening in powder coated finish with POT optics reflector, toughened glass cover (IP 65 protection) control gear and lamp holder suitable for the 150W Metal Halide lamp pre-wired up to the terminal block including supply and providing suitable lamps in the existing GI pipe and giving connections with the extended original wiring and giving connection etc. as required of the following types and ratings.	9	nos	4596	41364
<b>14</b>	<b>Miscellaneous</b>				
a	Supply and providing 5 Kg. Dry Chemical Powder type Fire Extinguisher with hose and clamps including fixing it to wall as required.	1	E	3066	3066
b	Supplying and installation of supports, anchor bolts etc made out of suitable size single section MS angle, flats etc as required including painting with 2 coats of synthetic enamel paint	30	Kg	85	2550
c	Charges for Preparation of drawings, and obtaining approval from Electrical Inspectorate and KSEB. Including all liaison work	1	Job	10000	10000
d	Painting letters or figures of 2.50 cm, 4 cm or 5 cm height with enamel paint as identification mark to SB, DB, panel board etc as required	25	Nos	8.3	207.5
	<b>TOTAL</b>				<b>2650000</b>
<b>( Rupees Twenty Six Lakh fifty thousand Only)</b>					