

**University of Kerala
Engineering Unit, Kariavattom**

TENDER SCHEDULE FOR THE ELECTRICAL WORKS FOR THE UPGRADATION OF DOIC ALAPPUZHA							
Sl. No	Qty	Description in work	Unit	Rate	Rate in words	Amount in Rupees	
1							
1.1	8.5	m2	Fabrication, supply, conveyance, installation testing and commissioning of floor or wall mounting, dust and vermin proof, cubicle type MV panel board comprising of the following components/ devices & complying to IS 8623.	m2	2473.00	Rs.Two Thousand Four Hundred Seventy Three only	21020.50
			Fabrication of fully partitioned, dust and vermin proof enclosure for <i>panel assembly</i> as per form 4 of IS 8623 (with latest amendments) <i>using 2.00 mm CRCA sheet</i> as per approved design and requirement, with front and rear access facility, bus bar chambers, hinged doors for all switch gear compartments, earthing the doors using 4 sq mm braided copper conductor, providing necessary cut-outs for mounting meters, relays, indication lamps, bus bar interconnection etc, detachable covers for bus bar chamber and cable alley, <i>powder coating</i> the assembly after subjecting to 7 tank process etc as required. CRCA sheet alone be used for the fabrication. Angles/ flats/ slotted angles etc shall not be used for the fabrication of panel assembly. The measurments should be taken the area of the complete sheets used for panel board including partitions, folding, shrouding etc. including control wiring				

2			Supply and providing the following size of <i>SMC sheets</i> in the panel as barriers & shrouding using required bolts and nuts including cutting to shape etc., as required.				
2.1	0.2	m2	2 mm thick	m2	3184.00	Rs.Three thousand one hundred and eighty four only	636.80
3			Supply and fixing the following types of <i>beeding</i> along the periphery of doors/ other detachable compartments to make the panel assembly dust & vermin proof including sticking with glue				
3.1	20	m	U' section rubber beeding suitable for 1.60/ 2.00 mm sheet	m	8.00	Rs.Eight only	160.00
4	5	kg	Fabrication, supply, conveyance and installation of <i>angle iron frame work</i> for wall mounting panel board using suitable size angle iron cut and welded to shape including painting with two coats of synthetic enamel paint over a coat of zinc chromate primer, bolting the frame to the panel using required bolt and nuts, fixing the whole to the wall, making good the damages etc. as required.	kg	126.00	Rs. One Hundred Twenty Six only	630.00

5	2500	cm ³	Fabrication, supply & fixing main bus bar system and interconnections with electrolytic grade copper strips/ rigid conductors conforming to IS 1867 (with latest amendments) for bus bar arrangement with <i>single strip per phase</i> supported on finger type bus bar supports of adequate size, spacing between supports not exceeding 50 cm & overhang not exceeding 5 cm including bending to shape, drilling holes, tinning the points of contacts, fixing heat shrinkable PVC sleeves, plated bolts and nuts with plate washers and spring washers, copper sockets for round conductors, etc., as required.	cm ³	7.30	Rs.Seven & Ps. Thirty only	18250.00
6	250	cm ³	Fabrication, supply & fixing earth bus system with copper strip/ conductor and connecting all accessories as per rule including g tinning the points of contacts etc as required	cm ³	6.90	Rs. Six & Ps.Ninety only	1725.00
7			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				
7.1	1		Incomer ---160 A, 35/36 kA (Ics=100%Icu), 4 pole, current limiting type MCCB with microprocessor based release with overload setting of 50 - 100% having adjustable OL & SC	E	15844.00	Rs.Fifteen thousand eight hundred and forty four only	15844.00
7.2	5		OUT GOING --63 A-100A, 25/35 kA (Ics=100%Icu), 3 pole, current limiting type MCCB having thermal setting range of 80 - 100% with thermal magnetic release having adjustable OL	E	5100.00	Rs.Five thousand and one hundred only	25500.00

8	1	nos	Three phase multifunction meters to read V, A and F, accuracy class 1	E	2967.00	Rs.Two Thousand Nine Hundred and Sixty Seven only	2967.00
9	3	nos	LED indicators for all voltage ranges - Red, Green, Black, Yellow or Orange Colour	E	123.00	Rs.One Hundred Twenty Three only	369.00
10	6		For MCCB up to 250 A rotary kit	E	1685.00	Rs.One thousand six hundred and eighty five only	10110.00
11	3		150/ 5 A, 5 VA, resin cast metering CT of accuracy class 0.5	E	1070.00	Rs.one thousand and seventy only	3210.00
12	1	nos	Aluminium anodised Danger Notice Board of size 200 x 150 mm. with inscriptions (both in English and Malayalam) and conventional Skull and Bone in Red colour.	E	126.00	Rs.One Hundred Twenty Six only	126.00
13	1	nos	Aluminium anodised legend plate of size 100 x 40 mm. with inscription of BUS BAR CHAMBER .	E	34.00	Rs.Thirty Four only	34.00
14	2	nos	Aluminium anodised legend plate of size 100 x 40 mm. with inscription of CABLE ALLEY.	E	34.00	Rs.Thirty Four only	68.00
15	1		Supply and providing 2mm thick Elastomeric fire retardent insulating mat as per IS 15652/2006 to withstand 3.3 KV dielectric strength.	m2	1809.00	Rs.one thousand eight hundred and nine only	1809.00
16	1	No	Dismantling of existing panel board with all accessories and conveying to store	No	1160.00	Rs.One Thousand One Hundred and Sixty only	1160.00

17			Supply and wiring points according to IS 732-1989 using rigid PVC ivory conduit of minimum size 20 mm 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 FR <i>copper conductor cable</i> 650V grade, including providing switch board main, and continuous earthing with 14SWG copper, required qty of copper earth socket, brass bolt and nut crimping etc complete with suitable size modular type metal switch boxes, <i>modular type front plates (white)</i> etc. up to and including 6 A modular type ROHS compliant 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.				
17.1	2	nos	Single control light point with 6A, 3 plate ceiling rose	E	841.00	Rs.Eight hundred and forty one only	1682.00
17.2	1	nos	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.	E	421.00	Rs.Four hundred and twenty one only	421.00

18			Supply and installation of sheet steel, phosphatised and painted, dust and vermin proof enclosure of MCB 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				
18.1	1	nos	6 way (8+18) - 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)	E	8960.00	Rs.Eight Thousand Nine Hundred and Sixty only	8960.00
18.2	2	nos	4 way (8+12) - 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)	E	7739.00	Rs.Seven Thousand Seven Hundred and Thirty Nine only	15478.00
18.3	5	nos	12 way single phase double cover (IP 42/43) (upsdb)	E	1899.00	Rs.One Thousand Eight Hundred and Ninety Nine only	9495.00
18.4	1	nos	10 way single phase double cover (IP 42/43) (PDB -Valuation camp)	E	1689.00	Rs.One Thousand Six Hundred and Eighty Nine only	1689.00
18.5	1	nos	6 way (8+18) - three phase double cover (IP 42/43)	E	4039.00	Rs.Four Thousand Thirty Nine only	4039.00
19			Supply and installation of the following <i>accessories</i> 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				
19.1	2	nos	63 A four pole mini break isolator	E	752.00	Rs.Seven Hundred Fifty Two only	1504.00
19.2	1	nos	40 A four pole mini break isolator	E	716.00	Rs.Seven Hundred Sixteen only	716.00
19.3	4	nos	40 A double pole mini break isolator	E	356.00	Rs.Three Hundred Fifty Six only	1424.00

19.4	4	nos	40 A, 2 pole, 30 mA RCCB	E	2357.00	Rs.Two Thousand Three Hundred Fifty Seven only	9428.00
19.5	1		40 A, 4 pole, 100 mA RCCB	E	2881.00	Rs.Two Thousand Eight hundred and eighty one only	2881.00
19.6	50		6-32A(C curve)	E	219.00	Rs.Two hundred and nineteen only	10950.00
19.7	1	nos	32A 10 kA, TP MCB (C curve)(for ups input)	E	908.00	Rs. Nine Hundred Eight only	908.00
19.8	2		40 A, 10 kA, TP MCB (C curve)	E	1369.00	Rs.One thousand three hundred and sixty nine only	2738.00
20			Supply, laying and clamping of 1 no. PVC insulated and PVC sheathed armoured aluminium power cable, 1.1 KV grade of the following sizes using clamps noted along with the cables, spacing of clamps not exceeding 60cms, making good the damages , colour washing etc. as required.				
20.1	53		4 core 35 sq mm with factory made clamp	m	351.00	Rs.Three hundred and fifty one only	18603.00
21			Supplying siemens / tropodur type nickel plated <i>Double compression brass cable gland</i> for PVC insulated and PVC sheathed armoured aluminium/ copper conductor cable 1.1 KV grade, and making end termination suitable for 2/ 3/ 3½/ 4 core cable of the following sizes as required.				
21.1	6		35 sq mm	E	469.00	Rs.Four hundred and sixty nine only	2814.00
22			Supplying and providing <i>earth clamps</i> for siemens/ tropodur type cable glands of suitable length and other dimensions noted along with each size of glands for the following sizes of cables as required.				
22.1	6		25 sq - 95sq mm with 20 mm wide x 1.20 mm thick clip	E	27.00	Rs.Twenty seven Only	162.00

23		Supply of superior quality <i>aluminium tubular cable socket</i> and making core termination of cables of the following sizes including crimping etc. as required.				
23.1	24	35 sq mm	E	16.00	Rs.Sixteen only	384.00
24		Supply and clamping the following sizes of <i>PVC pipe</i> on wall with all required accessories including cutting and making good the walls, colour washing etc. as required as protective covering to cables.				
24.1	5	40 mm dia PVC pipe (8 Kgf / cm ²)	m	71.00	Rs.Seventy one only	355.00
25		Supply and drawing bare <i>earthing conductors</i> of the following sizes <i>along with wiring/ cables</i> and giving connection as required.				
25.1	100	2.65 mm copper conductor (12 SWG)	m	43.00	Rs.Fourty three only	4300.00
25.2	15	4.75 mm copper conductor (6 SWG)	m	133.00	Rs.One hundred and thirty three only	1995.00
26		Supply and laying bare <i>earthing conductors</i> of the following sizes <i>laid 0.6 m below ground level including excavating trench</i> of suitable size and refilling etc. as required <i>(in ordinary soil)</i> .				
26.1	10	4.75 mm copper conductor (6 SWG)	m	144.00	Rs.One hundred and forty four only	1440.00
27		supply of superior quality <i>copper earth socket</i> for the following sizes of earth conductor including crimping etc. as required.				
27.1	15	2.65 mm (12 SWG)	E	19.00	Rs.Nineteen only	285.00
27.2	4	4.75 mm (6 SWG)	E	31.00	Rs.Thirty one only	124.00
28		Supply and providing the following sizes of <i>bolt and nut</i> with washers on the existing MS box / earth bus etc. as required including drilling necessary holes as required				
28.1	10	25 x 3mm brass bolt & nut	E	17.00	Rs.Seventeen only	170.00

29			Supply and drawing 650/1100 V grade <i>PVC insulated stranded single core copper conductor cables</i> conforming to IS 694 part I 1990 in the existing surface / recess conduit as required including giving necessary connections of the following sizes.				
29.1	59		1.50 sq mm 1 run	m	45.00	Rs.Fourty five only	2655.00
29.2	90		1.50 sq mm 3 run	m	77.00	Rs.Seventy seven only	6930.00
29.3	10		1.50 sq mm 5 run	m	110.00	Rs.One hundred and ten only	1100.00
29.4	10		1.50 sq mm 6 run	m	126.00	Rs.One hundred and twenty six only	1260.00
29.5	10		1.50 sq mm 7 run	m	142.00	Rs.One hundred and fourty two only	1420.00
29.6	120		2.50 sq mm 1 run	m	55.00	Rs.Fifty five only	6600.00
29.7	60		2.50 sq mm 2 run	m	81.00	Rs.Eighty one only	4860.00
29.8	110	m	4.00 sq mm 2 run	m	106.00	Rs.Hundred Six only	11660.00
30			Supply and fixing the following sizes of <i>PVC Conduit</i> conforming to IS 9537 / 1983 part III along with all required accessories <i>on surface</i> including making good the damages etc as required.				
30.1	210	m	20 mm dia light gauge (FROM UPSDB TO SOCKETS)	m	83.00	Rs.Eighty Three only	17430.00
31			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 (<i>ROHS</i>)				
31.1	15	nos	8 module moulded plastic box on surface	E	233.00	Rs. Two Hundred Thirty Three only	3495.00
31.2	20	nos	2 module moulded plastic box on surface	E	185.00	Rs. One Hundred Eighty Five only	3700.00

32			Supply & Fixing the following types/ sizes of front plates on the existing modular boxes. (RoHS)				
32.1	15	nos	8 module white/ off-white	E	187.00	Rs.One Hundred Eighty Seven only	2805.00
32.2	20	nos	2 module white/ off-white	E	101.00	Rs.One Hundred One only	2020.00
33			Supply and Fixing the following modular switches & accessories in the existing front plates and giving necessary connections as required (Group B)				
33.1	30	nos	6 A SP 1 way switch	E	119.00	Rs.One Hundred Nineteen only	3570.00
33.2	45	nos	6A 3 pin shuttered socket	E	157.00	Rs.One Hundred Fifty Seven only	7065.00
33.3	10	nos	32A DP switch with indicator	E	316.00	Rs.Three Hundred Sixteen only	3160.00
33.4	10	nos	25A Socket	E	223.00	Rs. Two Hundred Twenty Three only	2230.00
34			Supply, conveyance, installation, testing and commissioning <i>wall mounting fan</i> of the following sizes using mounting brackets supplied along with the fan and giving connection with existing wire.				
34.1	12	nos	400 mm sweep	E	1746.00	Rs.One Thousand Seven Hundred Forty Six only	20952.00
35			Supply conveyance, installation, testing and commissioning the following types of light fittings made from CRCA sheet 0.5mm thickness with all accessories and lamps <i>directly on wall</i> 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				

35.1	7	nos	1200 mm 22 w LED lamp with for Single tube T8 box type fixture(Philips/Crompton/Havels/Wipro)	E	1403.00	Rs.Two Thousand Six Hundred Thirty Five only	9821.00
35.2	4	nos	Supply of 18 W Surface / Recess mounted Square/Round shaped LED down light fittings complete(Crompton/ Havels/ WIPRO/ Philips)	E	1788.00	Rs.One thousand seven hundred and eighty eight only	7152.00
36			Supply and renewing the following items in place of defective ones				
36.1	5	nos	Electronic Ignitor for 70/150 W Sodium/MH	E	233.00	Rs.Two Hundred Thirty Three only	1165.00
36.2	5	nos	Copper Ballast 70W Sodium/MH	E	725.00	Rs.Five Hundred Twenty Five only	3625.00
36.3	4	nos	70W Sodium Vapour Lamp	E	319.00	Rs.Three Hundred Nineteen only	1276.00
36.4	4	nos	10 microfarad capacitor	E	162.00	Rs. Hundred Sixty Two only	648.00
37	1	nos	Supply and fitting energy saving 10W LED IP65 Bulk head Luminary with opal diffuser on wall and giving connections with existing flex wire as required	E	1398.00	Rs.One Thousand Three Hundred Ninety Eight only	1398.00
38	40	nos	Supply , and renewing 40/38 W Flourescct tube n the existing tube light fittings	E	63.00	Rs.Sixty three only	2520.00
39	8	nos	Supply and rewing 36/40 W electronic ballast suitable for tube light fittings and giving conections	E	374.00	Rs.Three Hundred seventy four only	2992.00
40	6	No	Dismantling of existing DB with all accessories and conveying to store	No	580.00	Rs.Five Hundred Eighty only	3480.00
41	20	nos	Dismantling of ceiling fan and painting the same with one or more coats of spray painting with synthetic enamel paint of approved brand and manufacture to give an even shade ,including cleaning of surface with detergent and replacing the damaged rubber steel,nuts and bolts with washers and safety pins,replacement of faulty capacitor, reinstalling the same as require	E	218.00	Rs.Two Hundred Eighteen only	4360.00

42	21	nos	Dismantling the existing single/double tube flourescent fitting complete, cleaning and painting with two coats of synthetic enamel paint ,checking all connections and refitting the same in position and giving connections etc as required	E	95.00	Rs. Ninety Five only	1995.00
43	1		Supply and providing <i>plate earthing</i> as per IS 3043 <i>with 600x600x6.30 mm GI/CI earth plate</i> , 20 mm GI watering pipe fixed to the earth plate with 20 x 3 mm GI clamps, GI funnel with weld mesh, filling required quantity of charcoal 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. (<i>in ordinary soil</i>)	E	3917.00	Rs.Three thousand nine hundred and seventeen only	3917.00
44			Supply and providing the following sizes of <i>cast iron gully trap with covering</i> at the top of the inspection chamber of earth pit as required				
44.1	1		300 x 300 x 6 mm cast iron gully trap with covering	E	267.00	Rs.Two hundred sixty seven only	267.00
45			Supply and providing <i>earth lead from the test joint to the earth electrode</i> using the following sizes of conductors/ strips including cutting, drilling necessary holes (in case of strip) and fixing firmly with plate test joint etc as required.				
45.1	4		25 x 3 mm GI strip	m	73.00	Rs.Seventy three only	292.00

46			Supply and providing <i>test joint for the earthing system</i> using 2 Nos of the following sizes of strips including cutting and bending to shape, drilling necessary holes and fixed to the watering pipe etc as required.				
46.1	0.3		2 x 25 x 3 mm GI strip	m	165.00	Rs.One hundred and sixty five only	49.50
							354433.8

PAC Rs.3,54,434/- (Rupees Three lakh Fifty Four thousand Four hundred & Thirty Four only)

1. I/We agreed to execute the work.

2.% above the estimate rate.

2.% below the estimate rate.

3. At the estimate rate.

sd/-

CONTRACTOR

UNIVERSITY ENGINEER