

UNIVERSITY OF KERALA

ENGINEERING UNIT, KARIAVATTOM

TENDER SCHEDULE FOR THE STANDARDISATION OF EXISTING MAIN PANEL BOARD AT DEPARTMENT OF PHYSICS, KARIAVATTAM CAMPUS.

SI No	Qty	Unit	Description of Item	unit	Rate	Rate in words	Amount
			Main Panel				
1			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.				
a	11	m ²	Fabrication of fully partitioned, dust and vermin proof enclosure for panel assembly as per form 4 of IS 8623 (with latest amendments) using 2.00 mm CRCA sheet 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, powder coating 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	m ²	2473.00	Rupees Two thousand Four hundred and seventy three only	27,203.00
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.				
a	0.6	m ²	2 mm thick	m ²	3184.00	Rupees Three thousand One hundred and Eighty four only	1,910.40
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				
a	20	m	U' section rubber beeding suitable for 1.60/ 2.00 mm sheet	m	8.00	Rupees Eight only	160.00

4	3	m	Fabrication, supply, conveyance and installation of base frame for floor mounting type panel board using channel of class designation ISMC 75 including cutting, welding, drilling holes, painting with two coats of synthetic enamel paint over a coat of zinc chromate primer, bolting the frame to the panel and to the finished floor using required bolt and nuts, making good the damages etc. as required.	m	807.00	Rupees Eight hundred and seven only	2,421.00
5	3000	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 single strip per phase 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	Rupees Seven and Paise Thirty only	21,900.00
6	300	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	Rupees Six and Paise Ninety only	2,070.00
7			Incoming				
a	1	No.	400 A, 50/55 kA (Ics=100%Icu), 4 pole, current limiting type MCCB with microprocessor based release with thermal setting of 50 - 100% having adjustable OL & SC with spreader terminal(L & T / GE)	Each	42614.00	Rupees Forty two thousand Six hundred and fourteen only	42,614.00
b	1	No.	250-400 Earth fault relay(L & T/ GE)	Each	6665.00	Rupees Six thousand Six hundred and Sixty five only	6,665.00
c	1	No.	shunt release 250 A	Each	1889.00	Rupees One thousand Eight hundred and eighty nine only	1,889.00
8			Out going				
a	1	No.	63 A, 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(L&T/GE)	Each	5100.00	Rupees Five thousand and One hundred only	5,100.00

b	3	Nos.	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 (L&T/GE)	Each	5100.00	Rupees Five thousand and One hundred only	15,300.00
c	3	Nos.	125 A, 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 (L&T/GE)	Each	6601.00	Rupees Six thousand Six hundred and one only	19,803.00
d	1	No.	160 A, 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 (L&T/GE)	Each	9024.00	Rupees Nine thousand and Twenty four only	9,024.00
9			Accessories				
a	9	Nos.	rotary kit	Each	1685.00	Rupees One thousand Six hundred and eighty five only	15,165.00
b	3	Nos.	Single phase ammeter of accuracy class 1	Each	1055.00	Rupees One thousand and fifty five only	3,165.00
c	1	No.	Three phase volt meter (V - RY, YB, BR, R, Y, B) of accuracy class 1	Each	1683.00	Rupees One thousand Six hundred and eighty three only	1,683.00
d	1	No.	6 A 3 pole voltmeter selector switch to read voltage between 3 phases and neutral.	Each	459.00	Rupees Four hundred and fifty nine only	459.00
e	3	Nos.	200/ 5 A, 5 VA, resin cast metering CT of accuracy class 0.5	Each	1073.00	Rupees One thousand and Seventy three only	3,219.00
f	3	Nos.	LED indicators for all voltage ranges - Red, Green, Black, Yellow or Orange Colour	Each	123.00	Rupees One hundred and twenty three only	369.00
g	1	No.	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.	Each	126.00	Rupees One hundred and twenty six only	126.00
h	1	No.	Aluminium anodised legend plate of size 100 x 40 mm. with inscription of BUS BAR CHAMBER .	Each	34.00	Rupees Thirty four only	34.00
i	2	Nos.	Aluminium anodised legend plate of size 100 x 40 mm. with inscription of CABLE ALLEY.	Each	34.00	Rupees Thirty four only	68.00
j	2	Nos.	Aluminium anodised legend plate of size 40 x 20 mm. with inscription of EARTH.	Each	14.00	Rupees Fourteen only	28.00
k	6	Nos.	16 A, 415 V, HRC type Kit kat fuse unit.	Each	84.50	Rupees Eighty four and Paise Fifty only	507.00
l	6	Nos.	2 A, clip-on offset tag fuse link (Group B)	Each	43.00	Rupees Forty three only	258.00

			The board shall be fabricated incorporating all the above items and erection as directed at site.				
10	3	m ²	Fabrication of fully partitioned, dust and vermin proof enclosure 2.00 mm CRCA sheet of size 2000mmx400mmx300mm as per approved design and requirement with 8 compartment , hinged front door of each compartment , earthing the doors with 4 Sqmm braided copper conductor, provision for fixing 4 nos DMC support in each compartment for fixing suitable size copper bus bars , painting the same with 2 coats of synthetic enamel paint over a coat of zinc chromate primer and fixing the same on wall using suitable size anchor bolts etc as required.	m ²	1827.00	Rupees One thousand Eight hundred and twenty seven only	5,481.00
11	32	Nos.	Supply and providing 120 mm long 25x6 mm copper strips tinned at the points of and drilled holes , the fixing the same on the existing DMC supports and giving connections with existing cables etc as required	Each	115.00	Rupees One hundred and fifteen only	3,680.00
12	32	Nos.	Supply and providing DMC Flat Supports in the existing chamber using suitable bolt and nuts etc as required	Each	90.00	Rupees Ninety only	2,880.00
			<i>S & F Enclosures for MCB DB</i>				
13			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				
a	1	No.	4 way (8+12) - double cover TPN vertical DB with provision for fixing 4P MCB / Isolator/ RCCB/ RCBO as incoming and SP/ TP MCB as outgoing (IP 42/43)	Each	7739.00	Rupees Seven thousand Seven hundred and thirty nine only	7,739.00
b	1	No.	8 way (8+24) - double cover TPN vertical DB with provision for fixing MCCB as incoming and SP/ TP MCB as outgoing (IP 42/43)	Each	11310.00	Rupees Eleven thousand Three hundred and ten only	11,310.00
c			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				

d	1	No.	100 A four pole mini break isolator	Each	1246.00	Rupees One thousand Two hundred and forty six only	1,246.00
e	1	No.	100 A, 25 kA (Ics=100%Icu), 4 pole, current limiting type MCCB having thermal setting range of 80 - 100% with thermal magnetic release having adjustable OL & SC	Each	7633.00	Rupees Seven thousand six hundred and thirty three only	7,633.00
14			<i>S & F SP MCB</i>				
a	9	Nos.	6-32A(C curve)	Each	219.00	Rupees Two hundred and nineteen only	1,971.00
b	4	Nos.	32A TP MCB 10 KA	Each	908.00	Rupees Nine hundred and eight only	3,632.00
c	4	Nos.	40 A, 10 kA, TP MCB (C curve)	Each	1369.00	Rupees One thousand Three hundred and Sixty nine only	5,476.00
d	4	Nos.	50 A and 63 A, 10 kA, TP MCB (C curve)	Each	1369.00	Rupees One thousand Three hundred and Sixty nine only	5,476.00
			<i>SH: CABLING</i>				
15			Supply & laying of one number PVC insulated and PVC sheathed armoured aluminium power cable of 1.1KV grade of the following sizes in ground including excavation of trench of size 35 x 75 cm, refilling the trench etc. as required but excluding sand cushioning and protective covering (in ordinary soil).				
a	10	m	4 core 240 sq mm	m	1501.00	Rupees One thousand Five hundred and one only	15,010.00
16			Supply & laying of one number PVC insulated and PVC sheathed armoured aluminium power cable of 1.1KV grade of the following sizes in the existing RCC/ HUME / STONE WARE/ GI/ DWC pipe as required.				
a	10	m	4 core 240 sq mm	m	1424.00	Rupees One thousand Four hundred and Twenty four only	14,240.00
17			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.				
a	10	m	4 core 16 sq mm with factory made clamp	m	231.00	Rupees Two hundred and thirty one only	2,310.00

b	10	m	4 core 25 sq mm with factory made clamp	m	281.00	Rupees Two hundred and eighty one only	2,810.00
c	10	m	4 core 35 sq mm with factory made clamp	m	351.00	Rupees Three hundred and fifty one only	3,510.00
d	10	m	4c 50 sqmm	m	435.00	Rupees Four hundred and thirty five only	4,350.00
e	10	m	4c 70 sqmm	m	548.00	Rupees Five hundred and forty eight only	5,480.00
f	30	m	4c 240 sqmm	m	1499.00	Rupees One thousand four hundred and ninety nine only	44,970.00
			<i>ROUTE - MARKER</i>				
18	1	No.	Supply route marker with 102mmx102mm <i>cast iron, spike</i> 5mm thick with inscription 'LT Cable' there on bolted / welded to 35x35x6mm angle iron 60cm long and fixing the same in ground as required.	Each	194.00	Rupees One hundred and ninety four only	194.00
			<i>END TERMINATION OF CABLES</i>				
19			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.				
a	3	Nos.	4 core 16 sq mm	Each	319.00	Rupees Three hundred and nineteen only	957.00
b	3	Nos.	4 core 25 sq mm	Each	474.00	Rupees Four hundred and seventy four only	1,422.00
c	3	Nos.	4 core 35 sq mm	Each	469.00	Rupees Four hundred and sixty nine only	1,407.00
d	3	Nos.	4 core 50 sq mm	Each	646.00	Rupees Six hundred and forty six only	1,938.00
e	3	Nos.	4 core 70 sq mm	Each	714.00	Rupees Seven hundred and fourteen only	2,142.00
f	3	Nos.	4 core 240 sq mm	Each	1377.00	Rupees One thousand Three hundred and Seventy seven only	4,131.00

			<i>EARTH CLAMPS</i>				
20			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.				
a	3	Nos.	4sqmm-16 sq mm with 12 mm wide x 1 mm thick clip	Each	18.00	Rupees Eighteen only	54.00
b	3	Nos.	25 sq - 95sq mm with 20 mm wide x 1.20 mm thick clip	Each	27.00	Rupees Twenty seven only	81.00
21			Supplying and providing <i>earth clamps made out of copper strips</i> of the following sizes including cutting and bending the flat exactly to the shape of the gland, drilling necessary holes for nut & bolt, tinning the points of contacts and giving connections to the main earthing system as required.				
a	3	Nos.	20 x 3 mm for earthing glands of size 120 sq mm to 185 sq mm	Each	99.00	Rupees Ninety nine only	297.00
b	3	Nos.	25 x 3 mm for earthing glands of size 240 sq mm to 300 sq mm	Each	142.00	Rupees One hundred and forty two only	426.00
			<i>CABLE SOCKETS</i>				
22			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.				
a	12	Nos.	16 sq mm	Each	13.70	Rupees Thirteen and Paise Seventy only	164.40
b	12	Nos.	25 sq mm	Each	14.40	Rupees Fourteen and Paise Forty only	172.80
c	12	Nos.	35 sq mm	Each	16.00	Rupees Sixteen only	192.00
d	12	Nos.	50 sq mm	Each	19.00	Rupees Nineteen only	228.00
e	12	Nos.	70 sq mm	Each	24.00	Rupees Twenty four only	288.00
f	12	Nos.	240 sq mm	Each	77.00	Rupees Seventy seven only	924.00

23	2	Nos.	Supply and providing <i>plate earthing</i> as per IS 3043 with <i>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>)	Each	3917.00	Rupees Three thousand Nine hundred and Seventeen only	7,834.00
24			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				
a	2	Nos.	300 x 300 x 6 mm cast iron gully trap with covering	Each	267.00	Rupees Two hundred and sixty seven only	534.00
25			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.				
a	0.6	m	2 x 25 x 3 mm tinned copper strip	m	598.00	Rupees Five hundred and ninety eight only	358.80
26			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.				
a	4	m	25 x 3 mm copper strip tinned at the points of contacts	m	483.00	Rupees Four hundred and eighty three only	1,932.00
27			Supply and drawing bare <i>earthing conductors</i> of the following sizes <i>along with wiring/ cables</i> and giving connection as required.				
a	20	m	2.65 mm copper conductor (12 SWG)	m	43.00	Rupees Forty three only	860.00
b	20	m	3.15 mm copper conductor (10 SWG)	m	62.00	Rupees Sixty two only	1,240.00
c	20	m	4.00 mm copper conductor (8 SWG)	m	97.00	Rupees Ninety seven only	1,940.00
d	20	m	6.00 mm copper conductor (4 SWG)	m	189.00	Rupees One hundred and eighty nine only	3,780.00

28			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>).				
a	20	m	6.00 mm copper conductor (4 SWG)	m	198.00	Rupees One hundred and Ninety eight only	3,960.00
			<i>SOCKETS FOR earthing CONDUCTORS</i>				
29			supply of superior quality <i>copper earth socket</i> for the following sizes of earth conductor including crimping etc. as required.				
a	6	Nos.	2.65 mm (12 SWG)	Each	19.00	Rupees Nineteen only	114.00
b	6	Nos.	3.15 mm (10 SWG)	Each	19.00	Rupees Nineteen only	114.00
c	6	Nos.	4.00 mm (8 SWG)	Each	23.00	Rupees Twenty three only	138.00
d	6	Nos.	4.75 mm (6 SWG)	Each	31.00	Rupees Thirty one only	186.00
e	6	Nos.	6.00 mm (4 SWG)	Each	35.00	Rupees Thirty five only	210.00
30			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				
a	30	Nos.	25 x 3mm brass bolt & nut	Each	17.00	Rupees Seventeen only	510.00
b	50	Nos.	25 x 6 mm brass bolt & nut	Each	20.00	Rupees Twenty only	1,000.00
31			Supplying , threading , laying and jointing of the following sizes of 'B' class <i>GI pipe</i> with all required accessories <i>in ground in the existing trench</i> as protective covering to earth leads.				
a	12	m	25 mm dia	m	159.00	Rupees One hundred and fifty nine only	1,908.00
b	10	m	75mm	m	527.00	Rupees Five hundred and twenty seven only	5,270.00
32			Supply and <i>clamping</i> the following sizes of "B" class <i>GI pipe</i> on wall with all required accessories & clamps etc., including cutting and making good the walls, painting the exposed portions etc., <i>as protective covering to earth leads / cables</i> .				
a	10	m	75mm	m	565.00	Rupees Five hundred and sixty five only	5,650.00
33	1	m ²	Supply and providing <i>2mm thick</i> Elastomeric fire retardent insulating mat as per IS 15652/2006 to withstand 3.3 KV dielectric strength.	m ²	1809.00	Rupees One thousand Eight hundred and nine only	1,809.00

34	1	No.	Supply and providing <i>5 Kg. Dry Chemical Powder type Fire Extinguisher</i> with hose and clamps including fixing it to wall as required.	Each	2324.00	Rupees Two thousand Three hundred and twenty four only	2,324.00
35	1	No.	Supply and providing <i>9 Litre capacity GI Fire Bucket</i> 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	156.00	Rupees One hundred and fifty six only	156.00
36	1	No.	Supply and providing <i>First Aid Chart</i> duly framed and placed in a conspicuous location for clear vision.	Each	204.00	Rupees Two hundred and four only	204.00
37			<i>Painting letters or figures</i> of the following sizes with enamel paint as identification mark to SB, DB, panel board etc as required				0.00
a	300	Nos.	2.50 cm, 4 cm or 5 cm height	Each	12.00	Rupees Twelve only	3,600.00
38	1	No.	Dismantling the existing panel boards and conveying to the section store	Each	731.00	Rupees Seven hundred and thirty one only	731.00
39	0.65	m ²	Supply and Installation of outdoor feeder pillar box made out of 2 mm MS sheet of 350x300x250mm with hinged door construction and copium at the top and providing slotted angles for fixing fuse units and neutral links , painting the same with 2 coat of synthetic enamel paint over a coat of red oxide primer,fixing the same on the concrete post using suitable size painted flat iron clamps with bolt and nuts with washers etc as required.	m ²	1827.00	Rupees One thousand Eight hundred and twenty seven only	1,187.55
a	3	Nos.	400 A, 415 V, DIN type fuse base.	Each	738.00	Rupees Seven hundred and Thirty eight only	2,214.00

b	3	Nos.	250 A Din type HRC fuse	Each	529.00	Rupees Five hundred and twenty nine only	1,587.00
c	1	Nos.	300 A, 415 V, 2 way neutral link mounted on DMC/ SMC base.	Each	275.00	Rupees Two hundred and seventy five only	275.00
TOTAL Rs.							3,96,988.95

PAC Rs.3,96,989/- (Rupees Three Lakhs and Ninety six thousand Nine hundred and eighty nine only)

I/We agreed to execute the work. 1.% below the estimate rate.

2. % above the estimate rate. 3. At the estimate rate.

CONTRACTOR

UNIVERSITY ENGINEER

