

## UNIVERSITY OF KERALA

## ENGINEERING UNIT, KARIAVATTOM

TENDER SCHEDULE FOR THE ELECTRIFICATION WORKS OF OPEN WELL NEAR THE POND BEHIND BOTANY DEPARTMENT AT KARIAVATTOM  
CAMPUS(RETENDER)

SI No	Qty	Unit	Description of Item	unit	Rate	Rate in words	Amount
			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 FR PVC insulated stranded single core copper conductor cable 650V grade, including <i>providing switch board main and continuous earthing with No.14 SWG bare copper</i> , required quantity of copper earth socket, brass bolt and nut crimping/ soldering etc complete with suitable size modular type metal switch boxes, <i>modular type front plates (white)</i> etc. up to and including 6A 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. <i>(Group B/ RoHS compliant modular accessories).</i>				
1.10	11	Nos	Single control light point with 6A, 3 plate ceiling rose	E	841.00	Rs. Eight hundred & forty one only	9,251.00
1.20	1	No	Single control ceiling fan point with 6 A, 3 plate ceiling rose & with socket size stepped electronic regulator.	E	1498.00	Rs.One thousand four hundred & ninety eight only	1,498.00
1.30	1	No	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 & twenty one only	421.00

2.00			<i>Supply</i> conveyance, installation, testing and commissioning the light fittings of following types 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				
2.10	2	Nos	1x28wT5 fitting with APF electronic ballast suitable for continuous operation with THD <10%, power factor >0.98, RoHS compliant, high lumen tube .	E	1682.00	Rs. One thousand six hundred & eighty two only	3,364.00
3.00	4	Nos	<i>Supply</i> , conveyance, installation, testing and commissioning of pre-wired <i>48 W LED pressure diecast aluminium IP66 out door light fitting</i> complete with all accessories <i>in the existing GI pipe</i> and giving connections with required length of 16/0.20mm 3 core copper conductor flex wire conforming to relevant ISS or extending the original wiring and giving connection etc. as required (Havels make ENDURA CITYLINER NEO/Phlips/Crompton/ bajaj)	E	6884.00	Rs. Six thousand eight hundred & eighty four only	27,536.00
4.00			Supply, fabrication, conveyance and fixing the following sizes of B class <i>GI pipe bent to shape / cut and welded to shape</i> and fixing the same to wall / parapet using clamps as noted along with each size, painting with 2 coats of synthetic enamel paint over a coat of zinc chromate primer, making good the damages, colour washing etc as required (for the installation of outdoor light fittings).				
4.10	6	m	25 mm dia with HG company fabricated clamps	m	274.00	Rs. Two hundred & seventy four	1,644.00

5.00	4	Nos	Supply and fixing <i>cast aluminium stove enameled bulk head fitting</i> with deep drawn anodised aluminium body, epoxy powder coated, heat resistant prismatic glass cover suitable for 9 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.	E	601.00	Rs. Six hundred & one only	2,404.00
6.00			Supply and providing the following types and power rated <i>lamps</i> in the existing fittings as required				
6.10	4	Nos	Normal size 14 W BC / ES retrofit CFL	E	167.00	Rs. One hundred & sixty seven only	668.00
7.00	1		<i>Charges for cutting holes</i> suitable for accommodating <i>exhaust fans of sizes exceeding 305 mm sweep up to 450 mm</i> including plastering, colour washing etc. as required.	E	397.00	Rs. Three hundred & ninety seven only	397.00
8.00			<i>Supply, conveyance, installation, testing and commissioning</i> of the following sizes of <i>exhaust fans</i> 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.				
8.10	1	No	380 mm, single phase, heavy duty, 1400 rpm exhaust fan in metal frame	E	3164.00	Rs. Three thousand one hundred & sixty four	3,164.00
9.00			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.				
9.10	10	m	20 mm dia light gauge	m	83.00	Rs. Eighty three only	830.00

<b>10.00</b>			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.				
<b>10.10</b>	10	m	1.50 sq mm 1 run	m	45.00	Rs. Forty five only	450.00
<b>1.20</b>	5	m	2.50 sq mm 2 run	m	81.00	Rs. Eighty one only	405.00
<b>10.30</b>	5	m	<b>4.00 sq mm 2 run</b>	m	106.00	Rs. One hundred & sixty only	530.00
<b>11.00</b>			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>Group B/ RoHS compliant</i> )				
<b>11.10</b>	1	No.	6 module metal box in recess	E	198.00	Rs. One hundred & ninety eight only	198.00
<b>12.00</b>			Supply & Fixing the following types/ sizes of front plates on the existing modular boxes. ( <i>Group B/ RoHS compliant</i> )				
<b>12.10</b>	1	No.	6 module white/ off-white	E	152.00	Rs. One hundred & fifty two only	152.00
<b>13.00</b>			Supply and Fixing the following modular switches & accessories in the existing front plates and giving necessary connections as required ( <i>Group B RoHS compliant</i> )				
<b>13.10</b>	1	No.	6 A SP 1 way switch	E	119.00	Rs. One hundred & nineteen only	119.00
<b>13.20</b>	1	No.	16 A SP 1 way switch	E	161.00	Rs. One hundred & sixty one only	161.00
<b>13.30</b>	1	No.	6A 3 pin shuttered socket	E	157.00	Rs. One hundred & fifty seven only	157.00
<b>13.40</b>	1	No.	6/16 A socket	E	223.00	Rs. Two hundred & twenty three only	223.00

<b>14.00</b>			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				
<b>14.10</b>	1	No.	8 way single phase double cover (IP 42/43)	E	1572.00	Rs. One Thousand Five hundred & Seventy Two only	1572.00
<b>15.00</b>			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				
<b>15.10</b>	1	No.	25 A double pole mini break isolator	E	342.00	Rs. Three hundred & forty two only	342.00
<b>15.20</b>	1	No.	25 A, 2 pole, 30 mA RCCB	E	2023.00	Rs. Two Thousand & Twenty Three only	2,023.00
<b>15.30</b>	4	Nos	6-32A( C curve)	E	219.00	Rs. Two hundred & Nineteen only	876.00
<b>16.00</b>			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.				
<b>16.10</b>	280	m	4 core 95 sq mm	m	645.00	Rs. Six hundred & Forty Five only	180,600.00
<b>17.00</b>			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.				

17.10	10	m	4c 95 sqmm	m	663.00	Rs. Six hundred & Sixty Three only	6,630.00
18.00			Supply & laying of DWC pipe in <b>ordinary soil</b> 0.75m below ground level including excavation				
18.10	280	m	63 / 50 mm or nearest size	m	160.00	Rs. One hundred & Sixty only	44,800.00
19.00			<i>Supply and clamping</i> 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.				
19.10	3.00	m	50 mm dia PVC pipe (8 Kg / cm <sup>2</sup> )	m	93.00	Rs. Ninety Three only	279.00
20.00	10	Nos	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.	E	194.00	Rs. One hundred & Ninety Four only	1,940.00
21.00			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.				
21.10	2	Nos	95 sq mm	E	807.00	Rs. Eight hundred & Seven only	1,614.00
22.00			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.				
22.10	2	Nos	25 sq - 95sq mm with 20 mm wide x 1.20 mm thick clip	E	27.00	Rs. Twenty Seven only	54.00
23.00			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.				

23.10	8	Nos	95 sq mm	E	26.00	Rs. Twenty Six only	208.00
24.00	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> )	E	3917.00	Rs. Three thousand nine hundred & seventeen only	7,834.00
25.00			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				
25.10	2	Nos	300 x 300 x 6 mm cast iron gully trap with covering	E	267.00	Rs. Two hundred & Sixty Seven only	534.00
26.00			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.				
26.10	0.6	m	2 x 25 x 3 mm GI strip	m	165.00	Rs. One hundred & Sixty Five only	99.00
27.00			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.				
27.10	8	m	25 x 3 mm GI strip	m	73.00	Rs. Seventy Three only	584.00
28.00			Supply and drawing bare <i>earthing conductors</i> of the following sizes <i>along with wiring/ cables</i> and giving connection as required.				

28.10	10	m	4.00 mm copper conductor (8 SWG)	m	97.00	Rs. Ninety Seven only	970.00
29.00			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> ).				
29.10	20.00	m	4.00 mm copper conductor (8SWG)	m	107.00	Rs. One hundred & Seven only	2,140.00
30.00			supply of superior quality <i>copper earth socket</i> for the following sizes of earth conductor including crimping etc. as required.				
30.10	10	Nos	4.00 mm (8 SWG)	E	23.00	Rs. Twenty Three only	230.00
31.00			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				
31.10	6.00	Nos	25 x 3mm brass bolt & nut	E	17.00	Rs. Seventeen only	102.00
31.20	6.00	Nos	25 x 6 mm GI bolt & nut	E	10.70	Rs.Ten and paise Seventy only	64.20
32.00			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.				
32.10	20.00	m	15 mm dia		90.00	Rs. Ninety only	1,800.00



33.00	9.00	m <sup>2</sup>	Fabrication, supply, conveyance, installation testing and commissioning of floor or wall mounting, cubicle type MV panel board fully partitioned, dust and vermin proof enclosure for <i>panel assembly</i> as per form 4 of IS 8623 (with latest amendments) <i>using 1.60 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	m <sup>2</sup>	2223.00	Rs. Two thousand Two hundred & Twenty Three only	20,007.00
34.00			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.				
34.10	0.5	m <sup>2</sup>	2mm thick	m <sup>2</sup>	3184.00	Rs. Three thousand One hundred & Eighty Four only	1,592.00
35.00			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				
35.10	5	m	U' section rubber beeding suitable for 1.60/ 2.00 mm sheet	m2	8.00	Rs. Eight only	40.00

36.00	1200	cm <sup>3</sup>	Fabrication, supply & fixing main <b>bus bar system</b> and interconnections with electrolytic grade <b>copper</b> 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 <sup>3</sup>	7.30	Rs.Seven & paise Thirty only	8,760.00
37.00	250	cm <sup>3</sup>	Fabrication, supply & fixing <b>earth bus</b> system with <b>copper</b> strip/ conductor and connecting all accessories as per rule including g tinning the points of contacts etc as required	cm <sup>3</sup>	6.90	Rs.Six & paise Ninety only	1,725.00
38.00	1	No.	125A, 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	14112.00	Rs.Fourteen thousand One hundred &Twelve One only	14,112.00
38.10	1	No.	rotary kit up to 250A	E	1685.00	Rs.One thousand Sixhundred &Eighty Five only	1,685.00
39.00			S & F switch disconnecter fuse unit complete with handle assembly, door inter lock and padlocking arrangement of the following ratings:				
39.10	1	No.	32 A, AC 23 A, TPN SDF for DIN/ BS fuse	E	1567.00	Rs.One thousand Five hundred &Sixty Seven only	1,567.00
39.20	4.00	Nos	63 A, AC 23 A, TPN SDF for DIN/ BS fuse	E	2118.00	Rs.Two thousand One hundred &Eighteen only	8,472.00
39.30	1	No.	Three phase multifunction meters to read V, A and F, accuracy class 0.5	E	3706.00	Rs.Three thousand Seven hundred &Six only	3,706.00
39.40	3.00	Nos	100/ 5 A, 5 VA, resin cast metering CT of accuracy class 0.5	E	1272.00	Rs.One thousand Two hundred &Seventy Two only	3,816.00

39.50	3.00	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
39.60	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.	E	126.00	Rs. One hundred & Twenty Six only	126.00
39.70	30.00	kg	Supplying and installation including all manner of supports/ suspenders, anchor bolts etc for <i>cable trays</i> made out of suitable size channel sections, slotted angles, flats, MS plates etc as required including painting with 2 coats of synthetic enamel paint over a coat of zinc chromate primer, making good the damages, colour washing etc as required.	kg	110.00	Rs. One hundred & Ten only	3,300.00
40.00	10.00	kg	Supplying and installation of <i>supports</i> , anchor bolts etc made out of suitable size <i>single section MS angle, flats etc</i> as required including painting with 2 coats of synthetic enamel paint	kg	76.00	Rs. Seventy Six only	760.00
41.00	1.00	m <sup>2</sup>	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 <sup>2</sup>	1809.00	Rs. One thousand Eight hundred & nine only	1,809.00
42.00	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.	E	2324.00	Rs. Two thousand Three hundred & Twenty Four only	2,324.00
43.00	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.	E	156.00	Rs. One hundred & Fifty Six only	156.00
44.00	1	No.	Supply and providing <i>First Aid Chart</i> duly framed and placed in a conspicuous location for clear vision.	E	204.00	Rs. Two hundred & Four only	204.00

45.00			<i>Painting letters or figures</i> of the following sizes with enamel paint as identification mark to SB, DB, panel board etc as required					
45.10	50.00	Nos	2.50 cm, 4 cm or 5 cm height	E	12.00	Rs. Twelve only	600.00	
<b>TOTAL</b>							<b>Rs.</b>	<b>383,997.20</b>

**PAC Rs.3,83,997/- (Rupees Three lakh Eighty Three Thousand Nine Hundred and Ninety Seven only)**

I/We agreed to execute the work.

1. ....% below the estimate rate.

2. .... % above the estimate rate.

3. At the estimate rate.

Sd/-

CONTRACTOR

UNIVERSITY ENGINEER