

**UNIVERSITY OF KERALA**  
**ENGINEERING UNIT, KARIAVATTOM**

**Tender schedule for Providing electrical installations at new GIS and Computer Lab in the Department of Archaeology at Kariavattom**

Sl.No	Qty	Specification	unit	Rate	Rate in words	Amount
<b>1</b>		<b><i>Wiring points with PVC conduit, modular box with white front plate &amp; modular type accessories</i></b>				
		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>				
a	6 Nos.	Single control light point with 6A, 3 plate ceiling rose	E	841.00	Rs. Eight hundred & forty one	5046.00
b	1 No.	Single control ceiling fan point with 6 A, 3 plate ceiling rose & with socket size stepped electronic regulator.	E	1622.00	Rs. One thousand six hundred & twenty two only	1622.00
c	1 No.	Call bell point with piano type 6 A bell push at one end and 6 A, 3 plate ceiling rose at other end	E	1004.00	Rs. One thousand & four only	1004.00
d	1No.	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	483.00	Rs. Four hundred & eighty three only	483.00
<b>II</b>		<b><i>Supply &amp; installation of light fittings on TW round block</i></b>				

		Supply, conveyance installation testing and commissioning the light fittings of following types made of CRCA with 0.5mm thickness complete with all accessories and lamps etc. directly on wall or ceiling with PVC round block neatly painted to suit the fitting and giving connection with required length of 16/0.20mm 3 core copper conductor flex wire conforming to relevant ISS and giving connections as required.				
a	6 Nos.	1x28w T5 fitting with APF electronic ballast suitable for continuous operation with THD <10%, power factor >0.98, RoHS compliant, high lumen tube.	E	1717.00	Rs. One thousand seven hundred & seventeen only	10302.00
III		SH: ERECTION OF CALL BELL				
		Supply and fixing the following types of superior quality 250V A.C call bell on existing M.S. box and giving connections with required length of 3 core, 16 / 0.20mm 650/1100V grade PVC insulated and PVC sheathed round copper conductor flex wire conforming to relevant ISS or with the extended original wiring, earthing the MS box and making good the surface as required.				
a	1 No.	Buzzer	E	110.00	Rs. One hundred & ten only	110.00
IV		SH: SUB MAIN WIRING				
1		Supply and fixing the following sizes of 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	30M	20 mm dia light gauge	m	83.00	Rs. Eighty three only	2490.00
b	5M	25 mm dia light gauge	m	95.00	Rs. Ninety five only	475.00
2		Supply & drawing copper wires				
		Supply and drawing 650/1100 V grade PVC insulated stranded single core copper conductor 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	5M	2.50 sq mm 1 run	m	55.00	Rs. Fifty five only	275.00

b	65M	2.50 sq mm 2 run + 1 Run 2.5 Sqmm green colour wire ( for computer plugs and 16 A Plug socket)	m	107.00	Rs. One hundred & seven only	6955.00
c	15M	4.00 sq mm 2 run +1 run 4 Sqmm green wire ( For A/C Unit)	m	145.00	Rs. One hundred & forty five only	2175.00
d	15M	6.00 sq mm 2 run + 1 run 6 Sqmm green wire (from UPS to computer DB)	m	202.00	Rs. Two hundred & two only	3030.00
3		Supplying & Drawing the following types of <i>UTP Cable</i> conforming to relevant standards through the existing conduit and giving connections as required				
a	60M	Cat 6 UTP Cable	m	52.00	Rs. Fifty two only	3120.00
b	12 Nos.	Supply and crimping RJ 45 socket using crimping tools	E	17.00	Rs. Seventeen only	204.00
5		Supplying and fixing the following sizes of <i>M.S. Boxes</i> made out of 1.60 mm thick sheet painted grey (both inside and outside ) <i>in surface/ recess</i> including phenolic laminated sheet covers of thicknesses noted along with screwed to the box as front cover with steel screws, cup washers etc. making good the surface, painting /colour washing etc. as required.				
a	1 No	100 mm x 150 mm x 50mm with 3 mm sheet	E	205.00	Rs. Two hundred & five only	205.00
6		<i>Industrial plug &amp; socket</i>				
		Supply and fixing <i>SP &amp; N metal case enclosure</i> with 2 pole and earth plug socket with pin suitable for incorporating , SP MCB (including cost of SP MCB) in surface/ recess including giving necessary connections, making good the damages etc. as required.				
a	2	250V, 25A, 2 pole and earth	E	1190.00	Rs. One thousand one hundred & ninety only	2380.00
V		<b><i>SH: S &amp; F CABLE MANAGEMENT SYSTEM</i></b>				
1		Supply and fixing <i>50 x 50 mm PVC Cable Management System</i> with base and lid along with the following accessories conforming to IEC 61084/ BS 476 & 4678 on surface / recess including cutting the wall and making good the damages in case of recessed installation as required.				

a	3	50 x 50 mm CMS with base & lid	M	537.00	Rs. Five hundred & thirty seven only	1611.00
b	2	External Angle 90°	E	130.00	Rs. One hundred & thirty only	260.00
c	2	Internal Angle 90°	E	127.00	Rs. One hundred & twenty seven only	254.00
d	2	Cable Retainer	E	42.00	Rs. Forty two only	84.00
<b>2</b>		Supply and fixing <i>100 x 50 mm PVC Cable Management System</i> with base and lid along with the following accessories conforming to IEC 61084/ BS 476 & 4678 on surface / recess including cutting the wall and making good the damages in case of recessed installation as required.				
a	15	100 x 50 mm CMS with base & lid	M	935.00	Rs. Nine hundred & thirty five only	14025.00
b	4	Cable divider	E	108.00	Rs. One hundred & eight only	432.00
c	2	External Angle 90°	E	139.00	Rs. One hundred & thirty nine only	278.00
d	2	Internal Angle 90°	E	127.00	Rs. One hundred & twenty seven only	254.00
e	1	Flat Angle 90°/TEE	E	149.00	Rs. One hundred & forty nine only	149.00
f	1	End Cap	E	92.00	Rs. Ninety two only	92.00
g	2	Joint cover	E	96.00	Rs. Ninety six only	192.00
h	12	1 to 3 module mounting box	E	143.00	Rs. One hundred & forty three	1716.00
i	14	8 module mounting box	E	251.00	Rs. Two hundred & fifty one	3514.00
j	12	3 / 5 module under box divider	E	41.00	Rs. Forty one only	492.00
k	1	Reducer 100 x 50 to 50 x 50 mm	E	221.00	Rs. Two hundred & twenty one only	221.00
l	2	Cable Retainer	E	119.00	Rs. One hundred & nineteen only	238
<b>3</b>		<b><i>SH: SUPPLY &amp; FIXING MODULAR ACCESSORIES (GROUP B)</i></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	1	3 module metal box in recess	E	180.00	Rs. One hundred & eighty only	180.00
4		Supply & Fixing the following types/ sizes of front plates on the existing modular boxes. <i>(Group B/ RoHS compliant )</i>				
a	12	1 module white/ off-white	E	101.00	Rs. One hundred & one only	1212.00
b	1	3 module white/ off-white	E	116.00	Rs. One hundred & sixteen	116.00
c	14	8 module white/ off-white	E	187.00	Rs. One hundred & eighty seven	2618.00
5		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>				
a	28	6 A SP 1 way switch with indicator	E	138.00	Rs. One hundred & thirty eight	3864.00
b	1	16 A SP 1 way switch	E	161.00	Rs. One hundred & sixty one	161.00
c	42	6 A Universal socket	E	147.00	Rs. One hundred & forty seven	6174.00
d	1	6/16 A socket	E	223.00	Rs. Two hundred & twenty three	223.00
e	12	RJ45 Computer socket	E	119.00	Rs. One hundred & nineteen only	1428.00
f	12	Blank plate 1 M	E	19.00	Rs. Nineteen only	228.00
VI		<b><i>SH: SUPPLY &amp; FIXING MCB DBs &amp; ACCESSORIES</i></b>				
1		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	12 way single phase double cover (IP 42/43) ( For Computer plugs)	E	1899.00	Rs. One thousand eight hundred & ninety nine only	1899.00
b	1	4 way (8+12) - three phase double cover (IP 42/43)	E	3329.00	Rs. Three thousand three hundred & twenty nine only	3329.00

2		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				
a	1	40 A double pole mini break isolator	E	356.00	Rs. Three hundred & fifty six only	356.00
b	1	40 A four pole mini break isolator	E	716.00	Rs. Seven hundred & sixteen only	716.00
c	1	40 A, 2 pole, 30 mA RCCB	E	2357.00	Rs. Two thousand three hundred & fifty seven only	2357.00
d	1	40 A, 4 pole, 100 mA RCCB	E	2881.00	Rs. Two thousand eight hundred & eighty one only	2881.00
3		<b>S &amp; F SP MCB</b>				
a	10	6/10/16 A SP MCB C curve 10 KA	E	219.00	Rs. Two hundred & nineteen only	2190.00
b	2	25/ 32 A, 10 kA, SP MCB (D curve)	E	273.00	Rs. Two hundred & seventy three only	546.00
4		Supply and installation of switch gear units in sheet steel enclosure complete with handle assembly, door interlock and pad locking arrangement of the following ratings on existing angle iron frame work or directly to wall using necessary bolts & nuts, fixing the unit to wall, making good the damages, colour washing etc. including giving necessary connections as required. (including cost of HRC fuse links in case of SDF/ SDFCO)				
a	1	32 A, 415 V, 50 Hz, AC 23 A duty, TP/ TPN switch disconnector unit ( By replacing the existing 32 A SPN in the existing sub panel board)	E	3282.00	Rs. Three thousand two hundred & eighty two	3282.00
VII		<b>SH: CABLING</b>				
1		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	30	4 core 10 sq mm with factory made clamp	m	197.00	Rs. One hundred & ninety seven only	5910.00
b	10	2 core 6 sq mm with factory made clamp ( From DB to UPS Socket)	m	157.00	Rs. One hundred & fifty seven only	1570.00
		<b>END TERMINATION OF CABLES</b>				
2		Supplying siemens / tropodur type nickel plated <b>Double compression brass cable gland</b> 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	2	6 sq mm	E	252.00	Rs. Two hundred & fifty two only	504.00
b	2	10 sq mm	E	271.00	Rs. Two hundred & seventy one only	542.00
		<b>EARTH CLAMPS</b>				
3		Supplying and providing <b>earth clamps</b> 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	4	4sqmm-16 sq mm with 12 mm wide x 1 mm thick clip	E	18.00	Rs. Eighteen only	72.00
		<b>CABLE SOCKETS</b>				
4		Supply of superior quality <b>aluminium tubular cable socket</b> and making core termination of cables of the following sizes including crimping etc. as required.				
a	4	6 sq mm	E	12.60	Rs. Twelve & ps. sixty only	50.40
b	8	10 sq mm	E	12.70	Rs. Twelve & ps. seventy only	101.60
VIII		<b>EARTHING &amp; EARTH CONDUCTORS</b>				

1	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 rock - soft laterite soil)</i>	E	4448.00	Rs. Four thousand four hundred & forty eight only	4448.00
2		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	1	300 x 300 x 6 mm cast iron gully trap with covering	E	267.00	Rs. Two hundred & sixty seven	267.00
3		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	0.3	2 x 25 x 3 mm GI strip	m	165.00	Rs. One hundred & sixty five only	49.50
4		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	3	3.15 mm bare copper conductor (10 SWG)	m	55.00	Rs. Fifty five only	165.00
		<b>SUPPLY &amp; DRAWING EARTH CONDUCTORS</b>				



5		Supply and drawing bare <i>earthing conductors</i> of the following sizes <i>along with wiring/ cables</i> and giving connection as required.				
a	10	2.00 mm copper conductor (14 SWG)	m	26.00	Rs. Twenty six only	260.00
b	60	3.15 mm copper conductor (10 SWG)	m	62.00	Rs. Sixty two only	3720.00
6		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 hard soil)</i> .				
a	3	3.15 mm copper conductor (10 SWG)	m	97.00	Rs. Ninety seven only	291.00
		<b>SOCKETS FOR earthing CONDUCTORS</b>				
7		supply of superior quality <i>copper earth socket</i> for the following sizes of earth conductor including crimping etc. as required.				
a	2	2.00 mm (14 SWG)	E	18.00	Rs. Eighteen only	36.00
b	6	3.15 mm (10 SWG)	E	19.00	Rs. Nineteen only	114.00
8		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	6	12 x 3 mm brass bolt & nut	E	11.30	Rs. Eleven & thirty only	67.80
b	10	25 x 3mm brass bolt & nut	E	17.00	Rs. Seventeen only	170.00
9		<b>SH: PROTECTIVE PIPES TO EARTH LEADS</b>				
		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	2	15 mm dia	m	90.00	Rs. Ninety only	180.00
		<b>Total Rs.</b>				<b>115966.30</b>
<b>PAC Rs. 1,15,966/- (Rupees One lakh fifteen thousand nine hundred &amp; sixty six only)</b>						
I/We agreed to execute the work.      1. ....% below the estimate rate.						
2. ....% above the estimate rate.      3. At the estimate rate.						
<b>UNIVERSITY ENGINEER</b>				<b>CONTRACTOR</b>		