

**CONSTRUCTION OF ANIMAL HOUSE FOR MULTIDISCIPLINARY RESEARCH LABORATORY AT  
MEDICAL COLLEGE, THIRUVANANTHAPURAM**

SI No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
	<b>Part II B -electrical</b>				
<b>A</b>	<b>Wiring</b>				
1	Wiring for light point / fan point / exhaust fan point / call bell point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface/recessed PVC conduit with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sqmm, FR PVC insulated copper conductor single core cable etc. as required.				
1.1	Group B	Point	200		
1.2	Group C	Point	128		
2	Wiring for twin control light point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, 2 way modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm. FR PVC insulated copper conductor single core cable etc as required.	Point	12		
3	Wiring for light/power plug with 2 X 4 sq.mm FR PVC insulated copper conductor single core cable in surface/recessed PVC conduits along with 1 no. 4 sqmm FR PVC insulated copper conductor single core cable for loop earthing as required.	Rm	350		
		Rm			

Sl No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
4	Wiring for circuit/submain wiring along with earth wire with the following sizes of FR PVC insulated copper conductor, single core cable in surface/recessed PVC conduit as required.				
4.1	2 X 1.5 sqmm + 1.5 sqmm earth wire	Rm	800		
4.2	2 X 2.5 sqmm + 2.5 sqmm earth wire	Rm	1200		
4.3	2 X 6 sq. mm + 1 X 6 sq. mm earth wire	Rm	200		
5	Supplying and drawing following pair 0.5 sq.mm FR PVC insulated copper conductor,unarmored telephone cable in the existing surface/recessed PVC conduit as required				
5.1	2 Pair	Rm	550		
5.2	4 Pair	Rm	350		
6	Supplying and drawing co-axial TV cable RG-6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ recessed steel/ PVC conduit as required.	Rm	220		
7	Supplying and fixing of following sizes of PVC conduit along with the accessories in surface/ recess including painting in case of surface conduit , or cutting the wall and making good the same in case of recessed conduit as required for wiring.				
7.1	20mm	Rm	800		

Sl No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
7.2	25mm	Rm	400		
7.3	32mm	Rm	550		
8	Supplying and fixing metal box of following sizes (nominal size) on surface or in recess with suitable size of phenolic laminated sheet cover in front including painting etc as required.				
8.1	150 mm X 150 mm X 60 mm deep	each	10		
8.2	200 mm X 250 mm X 60 mm deep	Nos	10		
9	Supplying and fixing following modular switch/socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				
9.1	Telephone socket outlet	Each	20		
9.2	TV antenna socket outlet	Each	5		
10	Supplying and fixing stepped type electronic fan regulator on existing modular plate switch box including connections but excluding modular plate etc.as required.	Each	45		
11	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Each	60		

SI No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
12	Supply and fixing following size/modules, GI box along with the modular base & cover plate for modular switches in recess etc. as required.				
12.1	1 or 2 Module (75mm x 75mm)	Each	70		
13	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess including providing and fixing 3 pin 5/6 amps modular socket outlet and 5/6 amps modular switch, connection, painting etc. as required	Each	150		
14	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess including providing and fixing 6 pin 15/16 & 5/6 amps modular socket outlet and 15/16 amps modular switch, connection, painting etc. as required	Each	100		
<b>B</b>	<b>Installation of Light fitting</b>				
15	Installation, testing and commissioning of pre-wired, fluorescent fitting / compact fluorescent fitting of all types, complete with all accessories and tube etc. directly on ceiling/ wall, including connection with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable and earthing etc. as required.	Each	225		

Sl No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
16	Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (upto 30 cm) with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable etc. as required.	Each	45		
17	Supplying and fixing extra down rod of 10 cm length G.I. pipe ,15 mm dia, heavy gauge including painting etc. as required. (Note : More than 5 cm length shall be rounded to the nearest 10 cm and 5 cm or less shall be ignored)	Each	25		
18	Installation of exhaust fan in the existing opening, including making good the damage, connection, testing, commissioning etc. as required.				
18.1	Upto 450 mm sweep	Each	25		
<b>C</b>	<b>MCBs &amp; DBs</b>				
19	Supplying and fixing following ways surface/ recess mounting, vertical type, 415 volts, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200 amps tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCB's, with provision of 100 amps TP 16 KA MCCB as incomer, interconnection between incomer MCCB and bus bars (but without MCB's/ MCCB) as required . (Note : Vertical type MCB TPDB is normally used where 3 phase outlets are required.)				
19.1	8 Way TP	nos	3		

SI No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
20	Providing and fixing following rating and breaking capacity MCCB in existing cubicle panel board including drilling holes in cubicle panel, making connections, etc. as required.				
20.1	100A, 16kA	each	2		
21.0	Supplying and fixing following way prewired TP&N MCB distribution board of steel sheet for 415 volts on surface/ recess complete with loose wire box, terminal connectors for all incoming and outgoing circuits, duly prewired with suitable size FR PVC insulated copper conductor up to terminal blocks, tinned copper bus bar, neutral link, earth bar, din bar, detachable gland plate, interconnections, powder painted including earthing etc. as required.(But without MCB/ RCCB/ Isolator)				
21.1	4 way (4 + 12), Double door	Each	2		
21.2	6 way (4 + 18), Double door	Each	4		
21.3	8 way (4 + 24), Double door	Each	4		
22	Supplying and fixing 5 amps to 32 amps rating, 240 volts 'B' curve, miniature circuit breaker suitable for lighting and other loads of following poles in the existing MCB DB complete with connections, testing and commissioning etc, as required.				
22.1	Single pole	Each	192		
22.2	Triple pole	Each	16		

SI No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
23	Supplying and fixing single pole blanking plate in the existing MCB DB complete etc. as required.	Each	60		
24	Supplying and fixing following rating, four pole, 415 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
24.1	40 amps	Each	4		
24.2	63 amps	Each	4		
24.3	100 amps	Each	1		
25	Supplying and fixing following rating, four pole, (three phase and neutral), 415 volts, residual current circuit breaker (RCCB), having a sensitivity current upto 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
25.1	40	Each	4		
25.2	63	Each	4		
26	Supplying and fixing TP sheet steel enclosure on surface/ recess along with following ratings , 415 volts "C" curve TP MCB complete with connections, testing and commissioning etc. as required.				
26.1	16/25/32	Each	10		
26.2	40/63	Each	10		

Sl No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
27	Supplying and fixing 20 amps, 240 volts, SPN industrial type, socket outlet, with 2 pole and earth, metal enclosed plug top along with 20 amps 'C' series, SP, MCB in sheet steel enclosure on surface or in recess, with chained metal cover for the socket outlet and complete with connections testing and commissioning etc, as required.	Each	10		
28	Providing and fixing M.V. danger notice plate of 200 mm X 150 mm, made of mild steel, at least 2 mm thick, and vitreous enameled white on both sides, and with inscription in single red colour on front side as required.	Each	2		
<b>D</b>	<b>Cable Trays</b>				
29	Supplying and installing following size of perforated pre-painted M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
29.1	100 mm width X 50 mm depth X 1.6 mm thickness	Rm	350		
29.2	200 mm width X 50 mm depth X 1.6 mm thickness	m	250		
30	Supplying and installing following size of perforated pre-painted M.S. cable trays bends with perforation not more than 17.5%, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				



Sl No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
30.1	100 mm width X 50 mm depth X 1.6 mm thickness	Each	12		
30.2	200 mm width X 50 mm depth X 1.6 mm thickness	Each	15		
<b>E</b>	<b>Earthing</b>				
31	Earthing with G.I. earth pipe 4.5 metre long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal/ coke and salt as required.	Set	6		
32	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	Set	6		
33	Supplying and laying 6 SWG G.I. wire at 0.50 metre below ground level for conductor earth electrode, including connection/ termination with GI thimble etc. as required.	Rm	250		
34	Supplying and laying 25 mm X 5 mm G.I strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with G.I. nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I. nut bolt & spring washer spaced at 50mm)	Rm	300		

Sl No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
35	Providing and laying earth connection from earth electrode with 4.00 mm dia copper wire in 15 mm dia G.I. pipe from earth electrode including connection with copper thimble excavation and re-filling as required.	Rm	200		
36	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	Rm	350		
37	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	Rm	400		
38	Providing and fixing 4.00 mm dia copper wire on surface or in recess for loop earthing along with existing surface/ recessed conduit/ submain wiring/ cable as required.	Rm	250		
<b>F</b>	<b>MV Cable Laying</b>				
39	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.				
39.1	Above 35 sqmm and upto 95 sqmm	Rm	120		
39.2	Above 95 sqmm and upto 185 sqmm	Rm	240		

Sl No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
40.0	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing masonry open duct as required.				
40.1	Above 35 sq. mm and upto 95 sq. mm	Rm	50		
40.2	Above 95 sqmm and upto 185 sqmm	Rm	50		
43	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing RCC Hume / Metal pipe as required.				
43.1	Above 35 sq. mm and upto 95 sq. mm	Rm	50		
43.2	Above 95 sqmm and upto 185 sqmm	Rm	50		
44	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.				
44.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	Rm	600		
44.2	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	Rm	200		
45	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on cable tray as required.				
45.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	Rm	600		
45.2	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	Rm	200		

Sl No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
46	Supplying and making cable route marker with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size ) of size 60 cm X 60 cm at the bottom and 50 cm X 50 cm at the top with a thickness of 10cm including inscription duly engraved as required.	Each	30		
<b>H</b>	<b>MV Cable End Termination</b>				
47.0	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
47.1	3.5C x 120 sqmm	Each	4		
47.2	3.5C x 95 sqmm	Each	4		
47.3	3.5C x 70 sqmm	Each	4		
47.4	3.5C x 35 sqmm	Each	8		
47.5	4C x 25 sqmm	Each	10		
47.6	4C x 16 sqmm	Each	10		
47.7	4C x 10 sqmm	Each	10		
48	Providing, laying and fixing following dia G.I. pipe (medium class) in ground complete with G.I. fittings including trenching (75 cm deep)and re-filling etc as required				
48.1	50 mm dia	Rm	150		

Sl No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
48.2	80 mm dia	Rm	120		
48.3	100 mm dia	Rm	100		
48.4	150 mm dia	Rm	50		
49	Providing, laying and fixing following dia RCC pipe NP2 class (light duty) in ground complete with RCC collars, jointing with cement mortar 1:2 (1 cement : 2 fine sand) including trenching (75 cm deep) and refilling etc as required.				
49.1	150 mm dia	Rm	100		
49.2	300 mm dia	Rm	100		
<b>A. LT Panels</b>					
1	Supply, Installation, Testing & Commissioning of panel cubicle type, made out of 2mm thick CRCA sheet, totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system, including internal wiring with suitable size wires, rotary handle, spreaders etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.				
	<b>INCOMER</b>				
	1 set 160A, FP, Switch disconnecter fuse unit, AC23, 415V, 50Hz, complete with handle assembly and Din type HRC fuse.				
	<b>BUSBARS</b>				

SI No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
	1 Set of 200 Amp TPN busbars of high conductivity electrolytic quality Aluminium alloy.				
	<b>INSTRUMENTS</b>				
	1 No 3 phase Digital Multi function meter to read V, A, F with Acc class 1.				
	1 No 3 phase 4 wire CT operated energy meter, 5-10A, Acc. Class 1.				
	1 Set of phase indicating lamps, LED type, RYB.				
	1 Set of 2A 10kA C curve SP control MCB				
	1 Set of 200/5A, Class 1.0, 10VA, Cast Resin CT for metering.				
	<b>OUTGOING</b>				
	2 Nos, 100A, TPN, C curve, MCB				
	2 Nos, 63A, TPN, C curve, MCB				
	2 Nos, 32 A, TPN , C curve MCB	Job	1		
<b>B. Cables</b>					
2	Supply of following size 1.1 KV grade XLPE insulated, PVC sheathed, armoured Aluminium conductor power cable conforming to IS 7098 (Part 1) amended upto date.				
2.1	3.5C x 120 sqmm	Rm	250		
2.2	3.5C x 70 sqmm	Rm	100		
2.3	3.5C x 35 sqmm	Rm	250		
2.4	4C x 25 sqmm	Rm	300		

Sl No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
2.5	4C x 16 sqmm	Rm	150		
2.6	4C x 10 sqmm	Rm	300		
2.7	4C x 6 sqmm	Rm	100		
<b>C. Light fittings &amp; Fan</b>					
3	Supply of 1x28W, indoor surface mountable fluorescent CRCA sheet steel power coated body light fixture, 28W T5 lamp, electronic HPF ballast, lamp holder, prewired complete with all necessary accessories suitable for operation on 230V, 50Hz AC supply as required (Wipro WIF 20128 SG or Philips TMS122 M 2xTL5-28W EBT or GE GET CI 1x28 C/S HF)	each	90		
4	Supply & installation of 4x14W, recess mounted fluorescent light fixture with CRCA housing, micro optics, 14 W lamps, prewired complete with all necessary accessories like chain hook etc for installation suitable for operation on 230V, 50Hz AC supply as required.( Wipro WVF 22414 SGW / Philips TBS869 4xTL-5-14W EBP or GE GETC 4x14 MO MLC-R 300 HF)	each	130		
5	Supply of 1x18W indoor decorative luminaire with opal acrylic diffuser, end cap, and coloured rims, 1no. 18W T8 lamp, prewired complete with all necessary accessories suitable for operation 230V 50Hz AC supply complete with all mounting accessories as required. (Philips MIROLTA Slim 18W HF or Wipro WRF 211118 or equivalent)	each	20		

Sl No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
6	Supply and fixing of 1x9W Bulk head luminaire with glass cover, powder coated MS wire guard, die-cast aluminium housing, etc complete with all accessories like 9W CFL lamp etc as required. (Philips FXC101 / GE GECPLI).	each	20		
7	Supply & installation of 1x18 watts recess mounted down light fixture, with aluminium reflector, CRCA sheet housing, complete with all accessories like ballast, 18W CFL lamp etc complete as required. (Wipro WCP 32118 SGW / Philips FBH150 M 1xPL-C/4P 18W HFM 240V / GE CFL 1x18 BDN LH R (H) HF)	each	35		
7	Supply of 250mm sweep, louvered ventilating fan suitable for single phase 230 volt, 50Hz AC supply complete with motor, capacitor, louvers/shutters and all accessories as required complete. (Make : Usha Crisp Air or Crompton Briskair or equivalent)	each	15		
8	Supply of 300mm sweep, metal blades with safety guard suitable for single phase 230 volt, 50Hz AC supply complete with motor, capacitor and all accessories as required complete. (Make : Usha Turbo or Crompton Transair or equivalent)	each	25		



Sl No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
9	Supply of 1200 mm sweep min three star rated ceiling fan complete with motor, double ball bearing, blades, canopy, 30 cm down rod and without speed regulator suitable for 230 V 50 HZ, AC supply confirms to IS 374/1979 as required complete. (Make Usha Technix or Crompton High Breeze Plus or equivalent).	each	40		
10	Supply of 1x70W, integral flood light luminaire, single piece pressure die cast aluminium housing with epoxy polyester powder coating, toughened glass cover, IP65 and rectangular reflector for axially symmetrical wide beam distribution, SS toggles, prewired complete with all necessary accessories as required including 70W MH lamp. (Philips RVP339 1xMHNTD70W or equivalent).	Nos	10		
11	Supply and installation of 1x70 W HPSV Integral Gate light fittings / Post Top lantern with icecube cover complete with 70W. lamp, control gear. In dust, moisture proof in die cast aluminium housing similar to Philips HPS 110 or Equi. including suitable 40 mm dia G.I.Pipe on wall /gate complete.	each	4		

Sl No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
12	Supply & installation of Hot dipped Galvanised tubular swaged pole of 90 micron zinc coating with tensile strength 410 Mpa of overall length 9 Mtrs long single arm swan neck as per IS 2713. The pole shall have outside dia & thickness as 139.7x5.40, 114.3x4.5, 88.9x3.25mm, & sectional length 5.00+2+2 Mtrs alongwith 300 x 300 x 10 mm MS base plate welded at bottom. The pole shall have planting depth of 1.5 mtr & erected in PCC 1:2:4. The pole shall be provided with suitable size polycarbonate loop in loop out box. The loop in loop out box shall have 3 phase power connector or bus bar of required current rating for loop in loop out of cable, 4A C curve SP MCB. Required dia GI pipe shall be provided in the foundation for taking cable in & out from the pole. The cost of the civil foundation shall be measured along with civil items.	Each	20		
13	Supply, installation, testing & commissioning of IP66,150W MH street lighting, with die cast aluminium housing, anodised aluminum reflector, toughened glass, stainless steel toggle, heavy duty copper ballast, pf capacitor, 1x150W MH lamp etc as required. The light fitting shall be suitably installed with all required accessories to poles. The item shall include 3C x 1.5 sqmm PVC insulated copper unarmoured cable for connecting between the luminaire and the loop in loop out box. (Similar to Wipro WSH 71150 or equivalent).	Nos	20		

Sl No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
14	Supply & installation of integral, IP65, Post top luminaire with diecast aluminium powder coated housing, UV stabilized polyethylene bowl suitable for 1x70W MH lamp. The light fitting shall be mounted on 3mtr length pole, pole base, with all necessary accessories including 70W MH lamp. The cost of the civil foundation shall be measured along with civil items (Philips HPS360 1xMHNTD70W GR (antique silver) or equivalent)	Each	12		
<b>C. Telephone &amp; Data cabling</b>					
15	Supply & laying of 10 pair jelly filled (form skin type) armoured Telephone cable of 0.5mm dia annealed solid round copper wire, polythelene insulation direct in ground including excavation, sand cushioning, protective covering & refilling the trench etc as required. The cable shall be as per ITD specification.				
15	10 pair	Rm	200		
15	20 pair	Rm	250		
16	Supply & drawing Cat 6E cable in the existing surface / recessed steel / PVC conduit including connection to outlet as required.	Rm	200		
17	Supplying and fixing modular RJ 45 computer socket on the exisitng modular plate & switch box including connections but excluding modular plate etc. as required.	each	20		

Sl No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
18	Supplying and fixing following Telephone krone module in box made of plastic including hinged door, krone module with connection etc. as required.				
18.1	10 pair krone module	each	5		
18.2	20 pair krone module	each	3		
18.3	50 pair krone module	each	1		
19.0	Supplying and fixing following rating, 415 volts, C curve MCB in the existing DB, enclosure complete with connections, testing and commissioning etc. as required.				
19.1	40A FP MCB	each	5		
19.2	40A TP MCB	each	15		
19.3	63A TP MCB	each	15		
19.4	100A FP MCB	each	4		
<b>D. Safety Equipments</b>					
20	Supply and providing 6 mm thick & 1 m wide electrical grade chequered type rubber mat to withstand 3.3 KV dielectric strength conforming to IS 5429/ 1969.	Rm	30		
21	Supply and providing 9 Litre capacity GI Fire Bucket 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	2		

Sl No	Description of Items	Unit	Quantity	Rate (in figures & words) Rs	Amount in Rs
22	Supply and providing First Aid Chart duly framed and placed in a conspicuous location for clear vision.	Each	2		
	<b>Total Part II B-Electrical</b>				