

NAME OF WORK : Special maintenance and repairs of Electrical Installations fittings, fans and power mains at Government Arts College in Thiruvannamalai.

EMD : Rs. 24100/-					Date of tender: 03.06.2022
Sl. No	Qty	Description of Work	Rate in figure and Words	Unit	Amount
1	281 pts (Two hundred and eighty one points)	Rewiring with 2x1.5sqmm(22/0.3) PVC insulated unsheathed SC. Cu.Conductor of 1100V grade in suitable PVC rigid pipe on wall and ceiling with PVC accessories with TW switch box with 5A F.T. switch inflush with wall, covered with hylum sheet of 3mm thick with painting of suitable colour for open PVC light / fan point (For electronic regulator) (5 Points Per Coil)		1 pt (One point)	
2	24 pts (Twenty four points)	Rewiring with 2x1.5sqmm(22/0.3) PVC insulated unsheathed SC. Cu.Conductor of 1100V grade in suitable PVC rigid pipe on wall and ceiling with PVC accessories with TW switch box with 5A F.T. switch inflush with wall, covered with hylum sheet of 3mm thick with painting of suitable colour for open PVC light / fan point (For electronic regulator) (6 Points Per Coil) (For Rooms like Bath , Toilet,& Pump room etc..)		1 pt (One point)	
3	22 Nos (Twenty two numbers)	Renewal by Supply and fixing of WT bulk head fitting with guard (Higher End) suitable for 9W LED lamp with LED bulb.		1 No (Each)	

4	24 Nos (Twenty four numbers)	Renewal by Supply and fixing of single box type 4'20 W LED fitting complete (Higher End) with TW round blocks on wall or ceiling with LED tube with PVC unsheathed Copper leads from terminals to the fitting.		1 No (Each)	
5	195 Nos (One hundred and ninety five numbers)	Supply and fixing of single box type 4'20 W LED fitting complete (Higher End) with conduit pipe suspension from the ceiling with PVC unsheathed Copper leads from terminals to the fitting with tube.		1 No (Each)	
6	145 Nos (One hundred and forty five numbers)	Renewal by Supply and fixing of 1200mm (48") AC ceiling fan complete with stepped electronic 300W regulator with 500mm down rod on the existing clamp.(Higher End)		1 No (Each)	
7	87 Nos (Eighty seven numbers)	Renewal by Supply and fixing of 3 Nos. 5Amps (3 Pin and 2 Pin) combined flush type wall socket with control switches concealed in suitable TW Box covered with Hylem sheet in flush with wall with earth connection (For Computer Plug Socket)		1 No (Each)	
8	24 Nos (Twenty four numbers)	Renewal by Supply and fixing of 5A / 15A 3 pin combined flush type wall socket with 15A flush type switch on suitable TW Box		1 No (Each)	

9	8 Nos (Eight numbers)	Renewal by Supply and fixing of 25A flush type wall socket with 25 A DP MCB for AC/UPS with wall socket with Enclosure on wall with inter connection.		1 No (Each)	
10	2 Nos (Two numbers)	Renewal by Supply and fixing of 32Amps 4P sheet steel double door metal enclosure DB with 32AFP MCB on wall wall with earth connection (Higher End)		1 No (Each)	
11	2 Nos (Two numbers)	<p>Renewal by Supply, fixing and Testing of 1no. 2000VA (2KVA)online interactive UPS system (24VDC) /Electrical Inverter with pure SINE WAVE output with 1 hour back up & with the following features.</p> <p>1]. Inverter shall be free from workmanship defects sharp edges, nicks, scratches, burs etc., all fasteners shall be fixed properly. The equipments shall be complete with all parts and all the parts shall be functional.</p> <p>2]. Enclosure shall confirm to protection requirement of IRL to IS 13947 (Part I) 1993</p> <p>3] Switching device shall be mostly ET (or) IGBT</p> <p>4]Switching frequent shall be above 50 HZ</p> <p>5] Input: 120V to 269 V 50 Hz single phase AC</p> <p>6] Output: The variation in output voltage from No load to full load expressed as a percentages of no load shall not exceed +1.5% over and 20% variation of rated DC input voltage. The frequency of the output voltage shall be 50 Hz + 1.3%</p> <p>7] Inverter efficiency minimum 85% as per CIT 93 of ISS.</p> <p>8]Overload: Inverter shall withstand 10%overload for atleast 10 minutes protections.</p> <p>9]Input voltage goes outside the range 120 to 260 volts the system shall switch over to Inverter mode.</p>		1 No (Each)	

		<p>9] Input voltage goes outside the range 120 to 260 volts the system shall switch over to Inverter mode.</p> <p>10] Over Voltage short circuit and over load at inverter output terminals.</p> <p>11] Battery reverses polarity</p> <p>12] Protection against over discharge. The load shall be cut off as soon as the voltage terminals falls below i) 10.5 V for 12V and ii) 21V for 24 V battery system</p> <p>13] The inverter shall incorporate an arrangements for automatic change over of load from main supply to the inverter AC output in case of failure of mains supply with correct pending indication as per cl.5.6 of IS 13314/1992</p> <p>14] Inverter should have surge protection also</p> <p>15] Indicators. The following indicators shall be provide : i) Mains presence ii) mains mode iii) battery charging Inverter mode, battery low 80 battery bank 12 Volts lead battery to IS 7372(1995) with admts No.1,2 &3</p> <p>16] The unit should contain 2 no. of 150AH tall tubular batteries and shall be of reputed makes from the following. (i.e) Exide/Amci/Yuosa pretolite / Kirloskar / Amar raja ISI marked.(SR)</p>			
12	10 Nos (Ten numbers)	Renewal by Supply and fixing of 12 way single pole and neutral MCB sheet steel enclosure Distribution board with IP 42 protection metal Double door type with 1 No 32 Amps DP MCB as incoming and 10 Nos 6 Amps to 32 Amps SPMCB outgoing in flush with wall and making good of the concealed portion with earth connection only. The MCB DB and MCB's should be with ISI mark (Higher End)		1 No (Each)	
13	3 Nos (Three numbers)	Renewal by Supply and fixing of 8 way single pole and neutral MCB sheet steel enclosure Distribution board with IP 42 protection metal Double door type with 1 No 32 Amps DP MCB as incoming and 6 Nos 6 Amps to 32 Amps SPMCB outgoing in flush with wall and making good of the concealed portion with earth connection only. The MCB DB and MCB's should be with ISI mark (Higher End)		1 No (Each)	

14	4 Nos (Four numbers)	Renewal by Supply and fixing of vertical type 8 way triple pole neutral MCCB distribution board in sheet steel enclosure with IP 42 protection metal Double door type with 200A 4 pole MCCB 36ka as incoming 3 nos. 100A TP MCCB16Ka,5 nos. 63A TP MCCB16Ka .as outgoing on suitable Al frame work on wall with MS cable entry boxes with earth connection. The MCCBDB MCCB and MCB's should be with the ISI mark. Higher End)		1 No (Each)	
15	2 Nos (Two numbers)	Renewal by Supply and fixing of vertical type 4 way triple pole neutral MCCB distribution board in sheet steel enclosure with IP 42 protection metal Double door type with 100A 4 pole MCCB 25ka as incoming 1 nos. 63A TP MCB10Ka,9 nos. 32A SP MCB10Ka .as outgoing on suitable Al frame work on wall with MS cable entry boxes with earth connection. The MCCBDB MCCB and MCB's should be with the ISI mark.(Higher End)		1 No (Each)	
16	6 Nos (Six numbers)	Renewal by Supply and fixing of 30W LED street light fitting with heat resistant toughened glass with IP 65 Protection in suitable dia GI pipe (Class 'B') complete on the existing post or wall with PVC unsheathed Copper leads MS clamps and aluminium painting (Higher End)		1 No (Each)	
17	85 Nos (Eighty five numbers)	Renewal by Supply and fixing of Fan Step Regulator 300W square type (Higher End) in existing switch board with inter connection.		1 No (Each)	
18	304 mts (Three hundred and four metres)	Renewal by Supply and run of 2 of 1.5 sqmm (22/0.3) PVC insulated SC unsheathed Cu.Conductor of 1100V Grade in suitable PVC rigid pipe on wall and ceiling with continuous earth wire connection 14 SWG TC wire with painting of suitable colour.		1 Mt (One Metre)	

19	294 mts (Two hundred and ninety four metres)	Renewal by Supply and run of 2 of 4sqmm (56/0.3) PVC insulated SC unsheathed Cu.Conductor of 1100V Grade in suitable PVC rigid pipe on wall and ceiling with continuous earth wire connection of 14 SWG TC wire with painting of suitable colour.		1 Mt (One Metre)	
20	50 mts (Fifty metres)	Renewal by Supply and run of 2 of 6 sqmm (84/0.3) PVC insulated SC unsheathed Cu.Conductor of 1100V Grade in suitable PVC rigid pipe on wall and ceiling with continuous earth wire connection of 14 SWG TC wire with painting of suitable colour.		1 Mt (One Metre)	
21	60 mts (Sixty metres)	Renewal by Supply and run of 4 of 4sqmm (56/0.3) PVC insulated SC unsheathed Cu.Conductor of 1100V Grade in suitable PVC rigid pipe on wall and ceiling with continuous earth wire connection of 14 SWG TC wire with painting of suitable colour.		1 Mt (One Metre)	
22	58 mts (Fifty eight metres)	Renewal by Supply and run of 4 of 16 sqmm (101/0.45) PVC insulated SC unsheathed Cu.Conductor of 1100V Grade in suitable PVC rigid pipe on wall and ceiling with continuous earth wire connection of 14 SWG TC wire with painting of suitable colour.		1 Mt (One Metre)	
23	19 Nos (Nineteen numbers)	Renewal by Supply and fixing of LED- 4000K- 24W, 2 feet x 2 feet Square Type Surface Fitting with high brightness LED fitting (Higher End Philips / Havells / Equivalent) on wall or ceiling, with PVC unsheathed leads from terminals to the fitting.		1 No (Each)	

24	110 Nos (One hundred and ten numbers)	Supply and fixing of 4' 20 watts LED light for T8 fitting(Double side) with ISI mark (Higher End) on existing Light fitting with PVC unsheathed leads from terminal to the fitting		1 No (Each)	
25	4 Nos (Four numbers)	Renewal by Earthing as per the ISI specification with an earth electrode of 2.1mt class 'B' GI pipe of dia not less than 40mm, with copper earth plate of size 125mm x 50mm x 6mm, with necessary funneling arrangements with necessary masonry work and with 38mm RCC cover slab for the brick masonry.		1 No (Each)	
26	20 mts (Twenty metres)	Renewal by Supply and run of 25mm x 3mm tinned copper flat with necessary clamps / supports on wall / floor / ground for earth connection.		1 Mt (One Metre)	
27	138 mts (One hundred and thirty eight metres)	Renewal by Supply and laying of 4x 10 sq.mm PVC armoured LTUG cable in a trench to be excavated at a depth of 0.75 metre putting 0.15 mt. Layer of sand and covering the cable completely with bricks and sand and refilling the earth to make good.		1 Mt (One Metre)	
28	30 mts (Thirty metres)	Renewal by Supply and clarnping of 4x 10 sq.mm PVC LTUGarmoured LTUG cable on post or on wall with MS Clamps.		1 Mt (One Metre)	

29	8 Nos (Eight numbers)	Renewal by Supply and fixing of brass cable gland for 4 x 10 sq.mm PVC armoured LTUG cable, with earthconnection.		1 No (Each)	
30	52 mts (Fifty two metres)	Renewal by Supply and clarnping of 31/2 x 70 sq.mm PVC LTUGarmoured LTUG cable on post or on wall with MS Clamps.		1 Mt (One Metre)	
31	4 Nos (Four numbers)	Renewal by Supply and fixing of brass cable gland for 31/2 x 70 sq.mm PVC armoured LTUG cable, with earthconnection.		1 No (Each)	
32	4 Nos (Four numbers)	Renewal by Supply and providing cable end termination of 3 1/2 x 70 sq.mm PVC LTUG Aluminum armoured cable with necessary aluminium cable sockets by crimping etc. with electrical connection complete.		1 No (Each)	

33	1 No (One number)	<p>Supply and Erection of 400A capacity Dust and Vermin Proof Cubical Panel Board made up of 16 SWG CRCA steel with supply and fixing of the following interior mounting fuse switches with HRC fuses arranged in two Horizontal rows with one switch over the other with a central bus bar chamber and two nos of Horizontal cable chambers at the two ends one on each side next to the fuse switch chamber and confirming to IE rules.</p> <ol style="list-style-type: none"> 1. 400A TPN interior mounting disconnecter fuse switch with HRC fuses-2 no with interlaocking arrangements 2. 200A TPN interior mounting disconnecter fuse switch with HRC fuses- 4 nos 3. 125A TPN interior mounting disconnecter fuse switch with HRC fuse s- 6 nos <p>(All the switches are Higher End make only)</p> <p>The bus bar chamber will consist of 4nos of suitable size of copper flat for phase and neutral buses on epoxy moulded bus insulators at proper and sufficient spacing between the buses as per IE rules. This busbar chamber should be segregated from the adjacent chambers by providing hylem sheet of suitable thickness as partisans suitable size of copper flats should be provided all round the panel for earth bus.</p>		1 No (Each)	
----	----------------------	--	--	----------------	--

		<p>The fuse switches should be connected with the phase and neutral buses with suitable size of copper rod or flat and each switch should be connected with earth with 2 runs of No:8 SWG rigid copper rod with suitable lugs switches should be connected to the buses by suitable size of rigid copper rod/flat. Phase and neutral copper buses should be tinned properly.</p> <p>The panel should have a separate metering chamber at the top side consisting of 0-500V Digital Volt meter with selector switch 0-400A Digital Ammeter and CT arrangements LED indicator lamps should be provided with control switches and fuse units.</p> <p>The panel should be painted with one coat of Red oxide as primer coat and two coats of enamel paint of approved colour, Approved by the site engineer and also the 4 danger board. The capacity of fuse switches, size of the incoming and outgoing cables, the place to which the supply is fed shall be marked on switch chamber.</p> <p>The panel board should be mounted on 75mm x 37mm MS channel provided all round at bottom of the panel. The whole arrangement should be erected on a masonry pedestal to be constructed with suitable foundation bolts and nuts such that the lowest switch handle is at the height of 0.75m from the ground level.</p>			
34	1 No (One number)	Renewal by Supply and fixing of general purpose change over switch with side handle operation in sheet steel enclosure of 125A -FP-capacity with suitable angle iron frame work with top, bottom cable entry boxes on wall with 2Nos side earth connection provisions complete set.		1 No (Each)	
35	46 Nos (Forty six numbers)	Renewal by Supply and fixing of 200x150x3 mm hylem sheet for existing switch box		1 No (Each)	

10

No. of corrections in figure:

No. of corrections in words:

No. of overwriting in figure:

No. of overwriting in words

Contractor

Chief Engineer

36	53 Nos (Fifty three numbers)	Renewal by Supply and fixing of 5A Flush type switch for existing switch box		1 No (Each)	
37	3 Nos (Three numbers)	<p>Renewal by Supply and erection, testing and commissioning of 2.0 TR (24000 K.cal/hr) ABS Split type Air conditioner (5 star rating/ inverter) confirming to IS : 1391(part-2) 1992 with Admt No.1 fitted with hermetically sealed air compressor operating on refrigerant R-32 suitable for wall mounting for operation on 230V, 50 HZ single phase AC supply capable of performing;</p> <p>a) Cooling b) Dehumidifying c) Air circulating d) Filtering e) Refrigerant pipe lines – 3 mtr length</p> <p>The installation works for the above split type AC units include the following</p> <ol style="list-style-type: none"> 1. Mounting / fitting indoor and outdoor units at their respective locations 2. Laying refrigerant pipe line of required length not exceeding 3 meters distance & connecting both units after drilling hole/holes in the wall is required, thickness of the copper tubing shall not be less than 0.7 mm 3. Installing the section pipe with expanded polythene foam tubing 4. Laying drain pipe to throw out the condensate water being formed within indoor unit 5. Leak testing the entire system unit 6. Charging refrigerant gas in the unit 		1 No (Each)	

		7. Suitable electrical wiring with to be provided with 3.0 sq.mm PVC insulated copper wire between indoor and outdoor unit upto 3 meter length and upto switch within 3 meters of location of indoor unit. (Like 'O' General /Bluestar/ Carrier/Voltas– make) as directed by the department officers.			
38	3 Nos (Three numbers)	Renewal by Supply and installation of 5 KVA capacity Automatic Voltage Stabilizer with time delay relay (V-Gurad /Equivalent)		1 No (Each)	
39	3 Nos (Three numbers)	Renewal by Supply and fixing of suitable MS angle frame for mounting the outdoor units		1 No (Each)	
40	5 Nos (Five numbers)	Renewal by Supply and fixing of 450mm sweep high speed wall mount fan.(Higher end) in existing 5A switch board with inter connection		1 No (Each)	
			TOTAL		
			GST		
			GRAND TOTAL		
		40 Items (Forty items)			