

CO-OPERATIVE ACADEMY OF PROFESSIONAL EDUCATION (CAPE)

1st floor, COBANK Towers, Vikas Bhavan P.O., Trivandrum – 695 033

Tel : 0471-2316236, 2317696

TENDER DOCUMENT

**Electrification of Workshop Building at College of
Engineering, Aranmula**

CONTRACTOR

DIRECTOR

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NOTICE INVITING TENDER AND EXECUTION OF WORK

Tender No. W-10/2015-16/CAPE

dated. 17.02.2016

Sealed competitive tenders are invited by the undersigned from financially sound and well experienced valid Registered 'A/B' class Electrical contractors/firms for the Electrification work prescribed below up to 1.00 pm on 24.02.2016. The tender will be opened on the same day at 3.00pm. Bidders shall submit the registration fees and EMD along with the Tender in the form of DD drawn in favour of Director, CAPE payable at Thiruvananthapuram.

1	Name of Work	:	Electrification of Workshop Building at College of Engineering, Aranmula
2	Estimate PAC	:	Rs.22,000,00/-
3	Nature of work	:	LT
4	Time of completion	:	6 months
5	Cost of Tender Documents	:	Rs.2700/- including VAT
6	EMD	:	Rs. 50,000/-
7	Issue of tender documents	:	To be downloaded from the website www.capekerala.org
8	Last date and time of submission of tender	:	24.02.2016 up to 1.00 PM –off line (no online submission)
9	Date and Time of opening of Tender	:	24.02.2016 at 3.00PM

The details of the work, drawings, tender conditions and documents can be downloaded from the website www.capekerala.org from 24.02.2016. For any further details or clarification, the Assistant Engineer, CAPE Head Quarters may be contacted. The Director reserves the right to reject any or all the tenders without assigning any reason therefor and his decision is final and binding.

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Co-operative Academy of Professional Education

Tender No.W-10./2015-16/CAPE dated 17.02.2016

Sealed Tenders are invited from reputed financially sound Class 'A/B' Electrical contractors having valid license for carrying out all medium voltage Installation work issued by the Kerala State Electrical Licensing Board for carrying out the work work of Electrification of Workshop Building at College of Engineering, Aranmula with approved materials conforming to BIS standards and other Statutory Rules and Regulations at Collage of Engineering, Aranmula, as per the detailed specifications covered in the schedule attached herewith

Offers in sealed cover superscribing 'Tender for Electrification of Workshop Building at College of Engineering, Aranmula' shall be sent so as to reach the office of the undersigned on or before 13.00 Hrs on 24.02.2016

The offer should contain an EMD of Rs. 50,000/- (2.5% of cost) and registration cost of Rs. 2700/- by way of DD from SBT in favor of the Director CAPE payable at Trivandrum and Preliminary Agreement in Rs.200/- Kerala Stamp paper.

The tender shall be opened at 15.00. hours on 24.02.2016

The probable amount of the work is Rs. 22,000,00/-

**The Director,
CO-OPERATIVE ACADEMY OF
PROFESSIONAL EDUCATION (CAPE)
1st floor, COBANK Towers, Vikas Bhavan P.O., Trivandrum**

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Electrification of Workshop Building at College of Engineering, Aranmula

General Informations :

The newly constructed workshop building is a 3 storey building where in the fluid mechanics lab and electrical machines lab is proposed to be housed. Building will also house some class rooms. Electric power for the building is to be taken from the transformer cum panel room inside the existing main building.

The contractor who wishes to undertake the work shall be in possession of valid contracting license, minimum class "B" and shall be financially sound. All materials are to be procured and supplied by the contractor strictly in conformity with the list of approved materials. Where as equivalent from specified list is to be used, the same shall be with the prior written approval of the Consultants. Only qualified, experienced and skilled staff shall be engaged for executing the work. Contractor shall also be in possession of required tools and equipments for proper execution of work. Contractor shall not make any changes or modification in the installation scheme without the approval of the Consultants. Work shall be in good quality and workmanship. This contract will be subject to the tender rules of Co-operative Academy of Professional Education (CAPE). All civil works will be the responsibility of the contractor except holes for exhaust fans and making holes in the slabs for cables, which will be arranged by civil site office. But contract has to mark the locations for such works and give the correct dimensions sufficiently in advance for arranging the work. Wall piercing should be repaired properly and paint damage rectified. Contractor shall laise with KSEB for connecting the new load to the Transformer. All statutory payments will be made by the client.

Water and Electricity: subject to permission of client.

Time of completion: Will be specified by clients.

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General Specifications:

The installation shall comply with the relevant codes of IS for Electric Wiring, Indian Electricity Rules, I.E.Act, NEC and regulations of KSEB and Electrical Inspectorate.

Wiring shall be of the exposed type using PVC conduits and PVC trunkings. It shall be executed strictly as per layout drawings and the instructions contained therein. The secondary switch boards are of wall mounted type and positions are shown in the drawing for locating them. The panels are to be mounted on walls with M10 GI anchor bolts and shall be provided circular nylon blocks of 12mm thickness to facilitate air circulation. The anchor bolt shall penetrate 75mm into the wall. The panels shall have their tops at ht. 180cm from the top of finished floor and all should be at same level. Cables shall have sufficient loose length inside the box and should be kept neatly dressed and bunched with nylon cable ties. Conduits that are connected to the panels shall have female bush adaptors at their connecting end with the panel. Cables are to be terminated with brass compression glands, nickel plated.

DB's: D.B's shall be erected on wall and their tops to be at 180cm from finished floor. All conduits shall be connected to D.B with female bush adaptors.

Conduits: Conduits shall be run over the surface of walls/beams etc and clamped with PVC spacer saddles at 60cm interval. No ready made bends shall be used. Bends required shall be made with bending springs. Conduits joint shall be made using ready made couplers and glued with solvent cement. Female bush adaptors shall be used where conduits are to be terminated to D.B's, Trunkings and Switch Boxes etc. Pulling of wires shall be only after completing the conduit installations.

Switch boxes: All switch/socket boxes shall be flush mounted on wall.

Cables: Trenches for cables shall be 75cm deep for power cables and 60cm for telephone cables.

Cable Trays: Trays shown in the drawings are of the ladder type fabricated using MS angles and flats. The trays are to be painted with metal primer and then 2 coats of superior quality enamel paint to be applied. Duplex bonding shall be provided between tray sections for earth continuity. A copper flat is to be provided in each tray from which copper wires are to be extended to the isolator boxes (2 for 3 phase & 1 for SP) tied to cables with nylon ties, on either side of the cable, independently. For DC circuits single earth lead to be provided.

Trunking: Trunkings should be fixed to wall using GI pan head screws, 25mm long in zigzag manner, screws at 75cm spacing. Base and lid joints should not come in same place. Wires shall be bunched with cable ties at 1m interval before they are placed inside the trunking. There should not be any conduit entry from the end caps. Trunking should be provided temporary protection

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from dust & paint etc. Trunking level should be checked with water level. Height of trunking above floor level 260cm.

Fixing of Ceiling Fans: Hooks are already provided in the slabs for the ceiling fans. If they are not in level, new hook should be made with M10 GI anchor hooks of length minimum 75mm (stem). Fan regulators are to be 2m size electronic type.

Exhaust Fans: Holes are to be made for fixing fans (not in scope).

Fixing of Florescent Tube Lights: From ceiling ross, 0.5sqmm 3 core cu/pvc cable has to be used for connection to fitting. (Same procedure for fans also)

Note: Size of switch boxes shall not exceed 8 module.

Workshop Building – Aranmula

List of approved materials :

1. PVC Conduits and accessories : shall conform to IS 9537P III,
medium class - Precision, Konseal.
2. A) PVC female bush adaptor : IS 3419 – Presicion PFBA Range.
B) PVC Spacer Saddle : IS 3419 – Presicion PRBS Range.
3. PVC Trunking : IEC 61084/BS 476,4678 – M.K.,
Legrand
4. Copper/PVC Wires : IS 694:1990 FRLS – RR Cables,
L&T, Finolex,
Havells, Calter – CU/PVC
yellow/green earthing conductor.
5. CU/PVC unarmoured/ armoured control cable : IS 1554(P-1)/1988, meter marked –
Finolex, Havells, RR Cables.
6. PVC insulated armoured/ unarmoured power cables : IS 1554(P-1)/1988, 1.1KV –
Finolex, Havells, RR Cables.
7. Cable glands, lugs etc : Hex, Dowell, Ace, Calter
(Brass nickel plate double compression)

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8. Cable Ties : KSS, Surelock, Union by Compton.
9. Cable warning tape : Any reputed brand
10. D.B's – IS 13032/8623-3, IP: 43 : Indo Asian Gold Plus, Havells,
Anchor Panasonic Uno.
11. Sub Switch Boards : Havells load bank or exact
equivalent with prior written approval of Consultants.
12. Plate Switch (Modular type) : M.K, Crabtree, Legrand (White
Colour)
13. Switch Boxes GI : Same brand as the switches being
used. (Maximum size shall not
exceed 8 modules)
14. Ceiling Ross : 3 Plate type to IS – Anchor, Erik
15. Powder coated metal boxes for breakers & isolators : Same makes as D.B's being used.
16. Circuit Breakers – IS/IEC 60898-1 : ---- do ----
MCB's 10KA
MCCB IEC 60947-2/IS: 13947-2
17. Isolators AC22A, 6KV – IS/IEC 60947-3 : ---- do ----
18. RCCB – IS 12640 Part 1, 4KV : ---- do ----
19. A) DC MCB IS/IEC 60898 – 2 : C&S, Havells
B) Isolators IS/IEC 60947 – 3 : C&S, Havells
20. Change Over Switches : Havells, C & S
21. A) Ceiling Fans : 5 Star Rated
B) Exhaust Fans : Havells, Bajaj, Crompton, (subject
to prior approval)
22. Cable Route Marker FRP : K.S.S.
23. A) Luminaries : Type T - TMC090 1x TLD-36W
HF, 3 Star or
Exact equivalent from other similar
reputed makes.

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- B) Type L
- C) Type E

Flu: Tube & CFL – Philips
: Philips Nova 8W CFL
: Bajaj BJCB 118 WEB, 1x18W
CFL, Electronic Bulk head or exact
equivalent

24. D.C. Breakers

: Havells, C & S

**Terms & Conditions for the Electrification work as per schedule
accompanying the tender**

1. Only approved make of materials accepted as per list appended shall be used for the work. All other materials not mentioned in the list specifically shall conform to relevant IS standards.
2. M.V. installation shall conform IS. 732.
3. Earthing shall conform IS 3043 / 1988.
4. All wires shall be colour coded as below:
 - a) Single phase - Red.
 - b) Three phase - Red, Yellow, Blue.
 - c) Neutral - Black.
 - d) Earth - Green.
5. The final rates for the various items of work and materials if any coming under your scope of supply will be as detailed in the schedule.
6. The work shall be commenced immediately and carried out strictly in accordance with a time schedule prepared by you and approved by our consultants.
7. It shall be the responsibility of the contractor to prepare detailed drawings as per the design and guidelines given by the consultant and to submit the scheme for necessary approval under Rule 63 of IER 1956 from the Electrical Inspectorate. The contractor shall keep close liaison with the Electrical inspectorate and KSEB to expedite formalities like measurement of soil resistivity, scheme approval, power allocation and sanction for energisation.

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8. The schedule in general contains almost all the work and the material required for the work. In case any additional work / modification is found necessary during the actual execution of work it shall be carried out only with prior approval of the Consultant / Client and on mutually agreed terms.
9. The client shall bare all expenses towards statutory fees and charges leviable by the Electrical inspectorate and KSEB. Such fees shall be paid by the contractor and the amount spent by the contractor shall be reimbursed by the client on production of vouchers / receipts.
10. It shall be the responsibility of the contractor to carry out to the satisfaction of the client and consultant all necessary pre-commissioning tests before preparing the completion certificate for submission to the KSEB.
11. The contractor shall comply with the provisions of IER 1956 and Licensing Board Rules in regard to the execution and completion of the work.
12. The work shall be completed in all respects in accordance with the schedule within a period of **Six months** from the date of awarding the work.
13. The contractor shall furnish a guarantee for a period of **one year** from the date of commissioning of the installation, for all the works carried out as per this tender and shall undertake to replace/repair any equipment or materials supplied by them during this period of guarantee free of cost.
14. Any alteration or rectification of works of the existing installations suggested by Electrical Inspectorate shall be treated as extra items.
15. A copy of this shall be signed and returned to the Client as a token of acceptance.
16. **The contractor shall obtained scheme approval from Kerala State Electrical Inspectorate before commencing the work.**
17. **The contractor should sign on all pages of tender documents**
18. The successful bidder to whom the work is awarded should furnish 5% of the quoted value towards security deposit in the form of DD from a nationalized bank. It will be released after completion of the guarantee period of one year.
19. Retention of 2.5% of the gross amount of each running bill will be deducted. The retention amount will be released on commissioning of work.
20. The amount towards Earnest Money Deposit, Security Deposit and retention will not carry any interest.

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PRICE BID

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**ELECRIFICATION OF WORKSHOP BUILDING AT COLLEGE OF ENGINEERING,
ARANMULA**

TENDER SCHEDULE

Sl. No.	Description of Items	Qty	Unit	Rate	Amount
1	Supply specified quality materials and making wiring for following points using PVC conduits min dia 20mm (Medium, ISI) surface mounted on walls with PVC spacer saddles or recess mounted where necessary, fixing GI modular boxes and plate switches, flush mounted, individual control for lights, fans, sockets etc complete, test & commission. Wire size 2x1.0+1.5E Cu/PVC				
a)	Independantly controlled light points with 6A, 3 plate ceiling ross, 0.5x3c Cu/PVC flexible lead, 6A modular plate & plate switch.	225	Nos.	841.00	1,89,225.00
b)	--do-- for ceiling fan points, including 2m electronic step regulator, 6A plate switches, ceiling ross, 3 core 0.5sqmm lead cable etc complete.	126	Nos.	1,498.00	1,88,748.00
c)	--do-- for switch socket 6A, modular in independent location	46	Nos.	561.00	25,806.00
d)	--do-- for 2 way controlled light points for stair case with modular plate switch 6A, ceiling ross, lead cable etc complete	4	Nos.	1,262.00	5,048.00
e)	--do-- for exhaust fan points with ceiling ross & 0.5x3c PVC flexible cable etc complete	17	Nos.	421.00	7,157.00
2	Supply & fix PVC Trunking 50x50mm on wall as per specification(Trunking to IEC 61084/B.S 746,4678)	200	Mtr.	537.00	1,07,400.00
a)	End cape for trunking	16	Nos.	70.00	1,120.00
3	Subcircuit wiring: Supply and pull circuit wires in already installed conduits/trunkings for lights, fans, sockets & exhaust fans etc. 2x1.5+1.5E Cu/PVC, terminations etc (for complete building)	900	RM	77.00	69,300.00
4	Switch Boards: Supply & Install (wall mounted) the				

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a)	<p>following switch boards Load Bank range of Havells or exact equivalent from similar reputed makes (locally fabricated not accepted)</p> <p>8 Way TPN Panel with 250A Cu. Bus bar - 4 Pole, with cable alley on both side, metering section with analogue type Ammeter, Voltmeter, C.T.'s, selector switches, LED indications lamps, control fuses etc and MCB's</p> <p>A) Incoming 250A, 4P, 25KA B) Outgoing 1) 3 nos 63A, 3P, 25KA MCCB 2) 1 no 50A, 3P, 25KA MCCB 3) 2 nos 40A, 3P, 25KA MCCB 4) 1 no 32A, 3P, 25KA MCCB 5) 1 no 25A, 3P, 25KA MCCB</p>	1	Lot	1,20,000.00	1,20,000.00
b)	<p>Panel to above description with 4P, 250A Cu. Bus bars and all other accessories</p> <p>A) Incoming 250A, 4P, 25KA MCCB B) Outgoing 1) 1 no 80A, 3P, 25KA MCCB 2) 2 nos 63A, 3P, 25KA MCCB 3) 2 nos 50A, 3P, 25KA MCCB 4) 2 nos 32A, 3P, 25KA MCCB 5) 1 no 25A, 3P, 25KA MCCB</p>	1	Lot	1,20,000.00	1,20,000.00
c)	<p>Panel 4 Way TPN Havells Power Safe Brand to above description and Cu. Bus bars 200A, 4P, metering module with analogue type Ammeter, Voltmeter, C.T.'s, selector switches, LED indications lamps, MCB's etc (without cable alley) Or Exact Equivalent of similar reputed brands.</p> <p>Incomer 160A,25KA,TP MCCB (Adjustable) - 1 No Outgoing 2 Nos, 80A, TP, 16KA MCCB (fixed) do --- 1 No, 100A, TP, 16KA MCCB (fixed)</p>	1	Lot	79,000.00	79,000.00
5	Supply & install the following D.B's surface mount on walls (IP42/43)				
a)	8 way TPN Vertical D.B (8+24), double door as per approved list	2	Nos.	9,677.00	19,354.00
b)	6 way TPN Vertical D.B. (8+18) double door --- do ---	5	Nos.	8,690.00	43,450.00
c)	6 way TPN D.B. (8+18) double door -- do-	3	Nos.	4,039.00	12,117.00

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6	Supply & fix 200A, AC 23A, 4 Pole, On Load COS in sheet steel powder coated housing of specified make with front rotary handle	1	Nos.	13,295.00	13,295.00
7	Supply & fix the following MCB's of approved make and connect wires				
a)	SP MCB's "C" Serious, 10KA, 6A	75	Nos.	219.00	16,425.00
b)	SP MCB's "C" Serious, 10KA, 10A	11	Nos.	219.00	2,409.00
c)	SP MCB's "C" Serious, 10KA, 16A	7	Nos.	219.00	1,533.00
d)	3P, MCB's "C" Serious, 10KA, 10A	5	Nos.	919.00	4,595.00
e)	3P, MCB's "C" Serious, 10KA, 16A	2	Nos.	919.00	1,838.00
f)	3P, MCB's "C" Serious, 10KA, 25A	5	Nos.	919.00	4,595.00
g)	3P, MCB's "C" Serious, 10KA, 32A	3	Nos.	908.00	2,724.00
h)	RCCB 30mA, 4P, 40A	4	Nos.	2,780.00	11,120.00
i)	RCCB 100mA, 4P, 40A	2	Nos.	2,881.00	5,762.00
j)	RCCB 100mA, 4P, 63A	2	Nos.	3,306.00	6,612.00
k)	Isolators 4P, 40 A	8	Nos.	716.00	5,728.00
l)	Isolators 4P, 63 A	2	Nos.	752.00	1,504.00
m)	1m size Blanking Plates	44	Nos.	19.00	836.00
8	Supply & fix on wall the following minibreak isolators in powder coated original steel metal box. <i>(All Items to be same make as D.B's used)</i>				
a)	4P, 40A	17	Nos.	716.00	12,172.00
b)	2P, 40A	25	Nos.	356.00	8,900.00
9	<u>Armoured Cables:</u> Supply & lay the following cables as per description & specification. (1.1 KV Grade)				
a)	3.5c 185 sqmm AYFY Cable In excavated trench	181.818	Mtr.	990.00	1,79,999.82
b)	In existing tray	25	Mtr.	1,069.00	26,725.00
c)	In existing duct	5	Mtr.	1,003.00	5,015.00
10	3.5c 150 sqmm AYFY Cable				

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a)	In excavated trench	125	Mtr.	809.00	1,01,125.00
b)	In existing tray	20	Mtr.	889.00	17,780.00
c)	In existing duct	5	Mtr.	822.00	4,110.00
11	3.5c 50 sqmm AYFY Cable- clipped to wall	8	Mtr.	393.00	3,144.00
a)	3.5c 35 sqmm AYFY Cable - Clipped to wall and in existing ladder tray (using black ties)	76	Mtr.	316.00	24,016.00
b)	3.5c 16 sqmm AYFY Cable-1.1 KV- as above	10	Mtr.	231.00	2,310.00
c)	4c 10 Sq.mm -- do--	42	Mtr.	197.00	8,274.00
d)	4c 6 sq.mm – do --	123.64	Mtr.	186.00	22,997.04
e)	4c 4 sq.mm – do --	85	Mtr.	166.00	14,110.00
12	Supply & install the following cables for DC machines(in tray)				
a)	2c 6 sq.mm AYFY	56	Mtr.	157.00	8,792.00
b)	2c 6 sq.mm AYFY	26	Mtr.	135.00	3,510.00
c)	2c 6 sq.mm AYFY	38	Mtr.	398.00	15,124.00
13	Supply , install cable gland, terminate and connect cables of following sizes.				
a)	3.5c 185 sq.mm AYFY	2	Nos.	1,164.00	2,328.00
b)	3.5c 150 sq.mm AYFY	2	Nos.	1,008.00	2,016.00
c)	3.5c 150 sq.mm AYFY	6	Nos.	646.00	3,876.00
d)	3.5c 16 sq.mm AYFY	2	Nos.	319.00	638.00
e)	3.5c 35 sq.mm AYFY	8	Nos.	469.00	3,752.00
f)	4c 6sq.mm AYFY	6	Nos.	252.00	1,512.00
g)	4c 4 sq.mm AYFY	6	Nos.	221.00	1,326.00
h)	4c10 sq.mm AYFY	10	Nos.	271.00	2,710.00
i)	2c 95 sq.mm AYFY	6	Nos.	807.00	4,842.00
j)	2c 6 sq.mm AYFY	10	Nos.	252.00	2,520.00
k)	2c 4 sq.mm AYFY	6	Nos.	221.00	1,326.00
14	<u>Cable Trays:</u>				
a)	Supply & fix on wall MS ladder tray, fabricated out of 40x40x50mm angles &				

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	20x5mm flats (flats single piece only at 20cm centre to centre) and the brackets shown in the drawings duly painted with 1 coat metal primer and 2 coats superior quality enamel paint	424	Kg	75.00	31,800.00
b)	do ----- support brackets for trays as in drawing,spacing 1.5 meter	120	Kg	75.00	9,000.00
15	Earthing Leads: Supply and install the following sizes of copper earthing conductor tied to cables with nylon tie at 60 cm interval, each lead seperately.				
a)	No. 10 Cu	24	Mtr.	55.00	1,320.00
b)	No. 6 Cu	8	Mtr.	120.00	960.00
c)	No. 4 Cu	24	Mtr.	175.00	4,200.00
d)	20x3 mm flat Cu (Single run, inside trays, bolted to trays with brass nut and bolts).	80	Mtr.	386.00	30,880.00
e)	30cm long 25x3 cu strip earth bus with insulator support on walls (4 nos)	1.2	Mtr.	482.00	578.40
f)	GI strip 25x6 for connection to plate earths outside of building including excavation and back filling	30	Mtr.	135.00	4,050.00
g)	Supply and make plate earth to IS 3043 using Cast iron Plate 1200 x1200 x12mm size, required GI Pipe, 45x45x45cm watering chamber with CI cover IS grade, including excavation and backfilling etc, complete and show reading with earth megger (plate to be inter connected)	2	Nos.	10,652.00	21,304.00
h)	Supply and install C.I, 102x5mm oval/round cable route marker as per sketch shown in drawing No.10, enclosing in concrete with 25x6mm GI flat - 0.5m long bent to shape	10	Nos.	194.00	1,940.00
16	Telephone Cable:				
a)	Supply & lay 10pair 0.5mm dia Cu conductor armoured, sheathed telephone cable in excavated trench(ISI quality and ITD approved only)	140	Mtr.	92.00	12,880.00
b)	Clipped to masonry with spacer saddles at 50 cm spacingand connect to EPABX & Terminal box, test & commission,	40	Mtr	95.00	3,800.00
17	Luminaries:				
a)	Supply and install 1x36W, HF, 4ft flu: tube				

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	light 3 star rated - Philips Tarang with tube, connect to ceiling ross with 0.5sqmm Cu/PVC 3 core cable test & commission (type T on drawing)	225	Nos.	465.00	1,04,625.00
b)	do ----- type L, Philips Nova with 8 W CFL & connect	27	Nos.	425.00	11,475.00
c)	Type E. Bajaj 1x18W CFL fitting with ABS Body, clear polycarbonate cover and lamp 18W CFL Bajaj BJCB 118 WEB.	9	Nos.	1,300.00	11,700.00
18	Fans:				
a)	Supply and install 5 star rated ceiling fan 1200mm sweep from approved brands and connect with ceiling ross using 3 core 0.75sqmm Cu/PVC wire (ISI), test & commission (fans subject prior approval of Site Engineer), regulator not needed.	123	Nos.	1,853.00	2,27,919.00
b)	do ----- 900mm sweep	6	Nos.	1,354.00	8,124.00
c)	Supply and erect 200mm 1 ph, exhause fan in plastic body and with auto loover of approved brands	15	Nos.	1,538.00	23,070.00
d)	do --- 300/305mm 1 ph metal body exhaust fan with grill and of approved make	2	Nos.	1,828.00	3,656.00
19	Supply and install on wall using PVC Spacer Saddles the following ISI medium PVC conduits				
a)	20mm (for isolators & telephone sockets)	35	Mtr.	87.00	3,045.00
b)	25mm (for trunking to DB)	50	Mtr.	99.00	4,950.00
c)	Supply and pull 2 pair telephone cable 0.5mm dia cu. Conductor PVC insulated to ITD specifications and terminate	20	Mtr.	32.00	640.00
d)	Supply & install on wall GI box for telephone socket	3	Nos.	165.00	495.00
e)	Supply & install RJ 11 telephone jack modular type white	3	Nos.	139.00	417.00
f)	Supply & install on wall PVC terminal box with lid 100x100x7.5mm size (Hensel or equivalent)	1	No.	200.00	200.00
20	Supply and pulling in the existing conduit and trunking the following size of wires				
a)	2x1+1.0 E	130	RM	62.00	8,060.00
b)	2x1.5+1.0E	120	RM	77.00	9,240.00

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c)	2x2.5+1.5E	50	RM	107.00	5,350.00
d)	4x4+2x2.5E	6	RM	265.00	1,590.00
e)	1x50sqmm (19/1.78) Cu PVC Cable (Yellow/Green)	10	Mtr.	295.00	2,950.00
21	Supply and lay high dielectric strength, oil resistant, easy to clean Electrical Safety Mat, to IS 15652, made of dielectric elastomer 2mm thick	2	Sq.M	1,809.00	3,618.00
22	Supply and fix on wall 5kg dry chemical powder fire extinguisher	1	No.	2,324.00	2,324.00
23	Supply and fix on wall first Aid Box with medicines. (all fresh)	1	Lot	204.00	204.00
24	Earth work excavation in laterite soil to depth 75cm and required width lead upto 50m, lift 1.5m, neat banking, backfill & compact after laying cable	40	Cu.M	441.00	17,640.00
25	Supply and spread in cable trench granular rock sand to 15cm thickness as shown in drawing 10/10	8	Cu.M	2,040.00	16,320.00
26	Supply and fix over cables defect free burnt wire cut bricks of size 23x11.2x7 cm as shown in drawing 10/10, without gap between bricks	2385	Nos.	13.00	31,005.00
27	Supply & fix 12 way double door DB fabricated of 1.6mm CRCA sheet powder coated and having 2 nos vertical Cu. Bus bars of 200A capacity, incomer 200A DP(DC) MCCB, 25KA and outgoing 6 nos 32A DP, DC MCB's and 6 nos 20A DP, MCB's of approved make and LED indication lamp, earth studs etc	1	Lot	17,500.00	17,500.00
28	Supply & make concrete in 1:3:6 ratio with 20mm broken rock and cure, for embedding cable route markers including pit excavation and neat finish for top surface	0.0265	Cu.M	6,407.00	169.79
29	Supply & fix GI anchor expansion hooks M10 size and 75mm long for ceiling fans (where necessary)	25	Nos.	80.00	2,000.00
30	Provide labels and identification tags for DB's and cable etc with durable materials and firmly fixed	1	Job	750.00	750.00
31	Prepare and submit operation and maintenance manuals incorporating drawings, catalogues, guarantee cards				

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	etc, duly approved from consultants (2 volumes - spiral bound)	1	Job	600.00	600.00
32	Laison with KSEB / Electrical Inspectorate office for approval & load regularisation etc	1	Job	6,000.00	6,000.00
				Total	22,00,000.00
(Rupees twenty two lakh only)					

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Electrification of Workshop Building at College of Engineering, Aranmula

QUOTED RATE OF THE CONTRACTOR

I/We agree to undertake to execute the work

1. At estimate rate
2.% below estimate rate.
3.% above estimate rate.

Note: i) Score out which is not applicable.
ii) The rates may be quoted in **words** and **figures**.

Signature of Contractor

CONTRACTOR

DIRECTOR