



# INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

Jadavpur Kolkata – 700032, West Bengal, India. E-mail: rgtr@iacs.res.in

Phone: 2429 2816 (Direct), 2473 4971, 3372, 3073 Fax (91) (33) 2473 2805

**TENDER NOTICE NO. IACS /WS/SB/14/10**

**DATE: - 21/02/2014**

## TENDER NOTICE

Sealed item rate tender for the following work in prescribed form is invited only from the **IACS enlisted 'Class- III & IV contractors in the category of 'Electrical'** to carry out the job at IACS, Jadavpur, Kolkata.

**Name of Work** : **Electrical Renovation Work in Room No.- 131 in Inorganic Chem. dept. at 2nd floor of Main building for the lab of Dr. Amit Majumder at I.A.C.S., Jadavpur, Kolkata**

**Estimated Value** : **Rs 204787/- (Rupees Two Lakh Four Thousand Seven Hundred Eighty Seven only).**

**Earnest Money Deposit** : **Rs. 4095/- (Rupees Four Thousand Ninety Five only)**

to be paid in the form of **Demand Draft / Banker's Cheque / Pay Order** of a schedule Bank in favor of **Indian Association for the Cultivation of Science** payable at Kolkata.

**Eligibility Criteria: IACS enlisted 'Class- III & IV contractor in the category of 'Electrical'**

**Completion of Work** : **60 (Sixty) days** from the date of issue of work order.

**Cost of Tender Form** : Rs. 500/- ( Rupees Five Hundred only) per set (non refundable) to be paid in cash for issuance of tender paper from office of the Workshop Superintendent . However, the firms who will submit tender by downloading from our website ([www.iacs.res.in](http://www.iacs.res.in)) should deposit Rs.500/- (Rupees Five hundred only) in the form of non-refundable **Demand Draft/Pay order** of a scheduled Bank positively along with the tender in a separate Envelope without which the tender will summarily be rejected.

**Tender Issue Date** **21/02 /2014 to 27/02/2014** (up to 2.00 P.M. on each working day)

**Last date of application** : **27 /02/ 2014** (to be applied on letterhead by the firm mentioning NIT no. & Name of work on or before this date).

**Last date of Submission of Tender: 28/02/ 2014** (up to 2 PM). Complete Tender Form along with EMD in a sealed envelop super scribing the name of the work, NIT no. and due date of opening on the top of the envelop addressed to the Registrar, IACS, Jadavpur, Kolkata 700032 to be submitted to our Receiving/despatch Section.

**Date of Opening** : **28/02/2014** (at 3.00 P.M in presence of intending bidders)

**Acceptance of Tender** The IACS authority does not bind itself to accept the lowest Tender and reserves the right to reject any or all the tenders without assigning any reason thereof.

The tenders shall comprise of the documents like **Earnest Money Deposit in proper form and shape, copy of Valid Contractors license & Electricians license issued by the Licensing Board, DoE, Govt. of W.B. along with quoted price in the prescribed Bill of Quantities (BOQ) provided with the tender documents.**

The EMD shall be treated as part of the security deposit (to be deducted @ 10% of the bill value from each bill) for the successful bidder. Tender submitted without EMD or EMD not in proper form shall be summarily rejected. The SD will be released after six months from the date of successful completion of work. EMD for unsuccessful bidder will be refunded on demand after finalization of work order within 30 days.

Deviation limit for individual item, trade and contract as a whole is **25% (twenty five percent)**. No claim whatsoever will be entertained in this regard.

If the contractor fails to maintain the required rate of progress or to complete the work and clear the site on or before the contract or extended date of completion, he shall without prejudice to any other right or remedy available under the law, pay compensation the amount calculated at the rates stipulated below or such smaller amount as the Director may decide (whose decision in writing shall be final and binding) on the amount of the tendered value of the work for every completed day / week (as applicable ) that the progress remains below or that the work remains incomplete.

- i) Completion period not exceeding 3 months (stipulated) @1% per week or part thereof provided always that the total amount of compensation for delay to be paid under this condition shall not exceed 10% of the tendered value of work.

The Engineer in Charge may without prejudice to his any other rights or remedy against the contractor in respect of any delay, inferior workmanship, any claims for damages and / or any other provisions of this contract or otherwise, and whether the state of completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the following cases.

- i. if the contractor fails to rectify/replace the defects in spite of written notice by Engineer –in-Charge
- ii. If the contractor suspends the progress of work so that in the opinion of the Engineer-in-Charge he will be unable to secure completion of the work by the date of completion and do not improve performance even after written notice.
- iii. If the contractor neglects to carry out his obligation under the contract and / or commits defaults in complying with any of the terms and conditions and does not remedy if even after written notice.

When the contractor has made him liable for action under any of the aforesaid cases, the Engineer-in-Charge on behalf of IACS shall have powers

- a. To determine or rescind the contract. Upon such rescission, the full security deposit recoverable under the contract shall be liable to be forfeited and shall be absolutely at the disposal of IACS.
- b. After giving notice to the contractor to measure up the work done by him, get the balance work done by another contractor. Any expenses which may be incurred in excess of the sum which would work had been executed by him, shall be borne and paid by the original contractor and may be deducted from any of his dues.

Complete Tender Document will also be available at [www.iacs.res.in](http://www.iacs.res.in) and can be downloaded for submission. **Conditional tender including conditional rebates shall be summarily rejected. The quoted rate shall be inclusive of all taxes & duties i/c service tax.** Nothing extra will be paid to the Contractor except the accepted rate. In case of any discrepancies, the office copy will be referred and shall be binding to the contractor.

**REGISTRAR**

# TECHNICAL SPECIFICATIONS & SPECIAL CONDITIONS OF CONTRACT

## FOR ELECTRICAL WORKS CHAPTER 1 SPECIAL CONDITIONS OF CONTRACT

### 1.1 General

- 1.1.1 These Special Conditions of Contract supplement the General Instructions, General Conditions of Contract, Bill of Quantities and basic rates and Technical Specifications and tender drawings enclosed thereto, and shall be considered as part of the Tender Papers. Where the provisions of these Special Conditions of Contract are at variance with General Conditions of Contract, the Provisions of these Special Conditions of Contract shall prevail.
- 1.1.2 The several documents forming the tender are to be taken as mutually complementary to one another. Detailed drawings shall be followed in preference to small scale drawings and figured dimensions in preference to scaled dimensions.
- 1.1.3 If there are varying or conflicting provisions in the documents forming part of the contract, the Engineer-In-Charge shall be the deciding authority with regard to the intentions of the provisions and his decision shall be final and binding on the contractor.
- 1.1.4 The Employer reserves the right to exclude any of the Schedule items on reasons of the rates not being reasonable or subsequent change of design for evaluation of tender and deciding the contract during execution or work.
- 1.1.5 The Contractor may be required to carry out any addition or alteration work other than the specified in the schedule of work / bill of quantities as and when required, by the 'Employer' within the completion period of the project.

### 1.2 Scope of Work

- 1.2.1 The works to be governed by this contract shall cover delivery and transportation upto destination, safe custody at site, insurance, erection, testing and commissioning of the entire Electrical works.
- 1.2.2 The works to be under taken by the contractor will interalia include the following:
- i) Preparation of detailed 'AS BUILT' drawings of electrical wiring installation, cable laying, erection/fixing of switchgear etc.
  - ii) Pre-commissioning tests as per relevant standard specifications, code of practice, Acts and Rules.
  - iii) Warranty obligation for Circuit Breaker, CT, Cables, Capacitor etc to be supplied by the Contractor.

- iv) All other earthwork and masonry works required to be done in connection with the electrical works.

### **1.3 Execution of work**

1.3.1 All the works to be carried out as per the approved drawing and direction of the Engineer- In-Charge.

1.3.2 Water & Power supply: - It will be provided by IACS free of cost for the beneficial use of IACS only. However, the contractor shall have to arrange for utilizing the same at their cost and risk.

### **1.4 Period of Completion**

1.4.1 Time is the essence of contract. Therefore, timely completion of project is very important. Normally no extension of time will be given. However, on account of delay if any, for the reason beyond the control of the contractor, necessary time extension may be granted if applied for by the contractor prior to the expiry of schedule time of completion.

1.4.2 No price variations shall be admissible on the contract rate for any item during the entire period of contract including extension periods. *The Contractor shall not have any claim whatsoever in this regard except statutory variation of duties and Taxes imposed by Govt. of India/State Govt subsequent to the offer submitted by the contractor.*

### **1.5 Quality of materials and works**

All the materials to be used in the execution of the contract shall be of the approved quality and of the class most suited for the purpose specified. The work shall also conform to the following Acts, Rules and Orders:

- i) Indian Factories Act
- ii) Indian Electricity
- iii) National Building Code
- iv) National Electrical Code
- v) Indian Standard Specifications

1.5.1 All erection work shall be of the best workmanship & quality to the entire satisfaction of the Employer. The Contractor shall ensure that the equipment and services under the scope of this contract whether manufactured or performed within the Contractor's premises or at his subordinate's premises or at the work site or at any other place are strictly in accordance with the provisions of this contract. For this purpose, if necessary the Contractor shall adopt necessary quality assurance programme to control such activities at all stages.

### **1.6 Electrical License**

1.6.1 The work shall be carried out only by a Contractor holding a valid license issued by the State Government for carrying out the installation work of a voltage classes involved, under the

direct supervision of the persons holding valid certificates issued or recognized by the State Government. The tenderer should furnish with his tender the particulars of the license with validity period held by him. The successful tenderer shall furnish the names and particulars of certificates of competency of supervisors and workmen to be engaged for carrying out this work.

**1.6.2 The contractor shall not be allowed to engage sub-contractor directly or indirectly unless it is officially permitted by IACS.**

## **1.7 Inspection**

1.7.1 The Contractor shall provide without any extra cost to the Employer all materials, equipment, tools, labour and maintenance of every kind which the Employer's Inspecting Engineer may consider necessary for any test and examination to be made at the Contractor's or the Sub-Contractor's (if approved) premises and at site and shall pay all cost attended thereon.

1.7.2 All the equipment and materials shall be tested / inspected by the Employer or its authorized Inspecting Engineer and approved before they are installed / used in the execution of the works covered in the contract. If the Contractor uses any equipment / materials without the prior approval of Employer, those are liable to be rejected. The Contractor shall furnish, as and when demanded by the Engineer-in-Charge the T.C. (Test Certificate) and G.C (Guarantee Card) for verification of quality and make of the materials.

1.7.3 The Inspecting Engineer or his authorized Representative shall have at all times access to the Contractor's premises and shall have the power to

- i) Inspect and examine the materials and workmanship of the work at any time at the site of erection
- ii) Reject any part of the work submitted by the Contractor as not being in accordance with the contract.
- iii) Reject the whole of the work including equipment tendered for inspection if after the inspection of such portion as he may, in his discretion think fit he is justified that the same is unsatisfactory.
- iv) Mark the rejected equipment with a rejection mark so that the same may be easily identified
- v) Re-inspect at the time of erection at site any equipment both previously inspected and approved by the inspecting Engineer at the Contractor or Sub-contractor's (if approved) premises. Notwithstanding any approval given earlier, the Contractor shall

make good such rejections made based on such re-inspection at site to the satisfaction of the Engineer.

- vi) The decision of the Inspecting Engineer as regards to the acceptance or rejection of equipment / work shall be final and binding to the Contractor.

#### 1.7.4 Consequence of Rejection

On the equipment / assemblies being rejected by the Inspecting Officer of the Employer at destination of the Contractor shall replace such rejected equipment/assemblies of the forthwith but in any event not later than a period of 2 (two) weeks in the case of minor equipment and 4(four) weeks in case of a major equipment from the date of rejection. The Contractor shall bear all the costs of replacement including freight, etc., but without being entitled to any extra time on this account. The decision as to whether the equipment is to be classified as Minor or Major for the purpose of this clause shall be that of an Engineer and is not questionable.

### 1.8 Installation

- 1.8.1 All works connected with and inclusive of installation and erection under this contract shall be done in accordance with the standard and established methods of installation and erection of electrical equipment and shall comply with relevant Indian Electricity Rules, National Electrical Code, BIS Codes of Specifications and Standards. The work shall also be strictly in accordance with the instructions / recommendations of the manufacturers. **The equipment shall be leveled carefully before being fixed finally in position. All fragile and sensitive equipment shall be protected adequately and handled carefully during installation and erection.**

### 1.9 Commissioning Tests

- 1.9.1 As soon as the installations are ready for commissioning, the Contractor shall arrange for all the tests/ inspection as required by the relevant ISS and / or IE Rules and advise the Employer and others concerned. Employer shall depute their Inspecting Officer for witnessing the tests and to carry out inspection independently and also jointly with other concerned agencies where ever necessary and only after the installation passes the required tests and inspection, it should be commissioned / energized. The contractor shall arrange all testing equipments/apparatus/instruments as will be required for conducting the tests without any extra cost.
- 1.9.2 Visual Inspection shall include checks for satisfactory workmanship, all connections, painting, cleanliness of all fittings etc., and compliance with Indian Electricity Rules.

1.9.3 The ammeters, voltmeters and energy meters shall be checked for their calibration, scale, accuracy, etc. for compliance with the specified requirement.

- 1.9.4 (i) Manufacturer's test Certificates shall be furnished on demand.  
(ii) Certificates of compliance to routine test shall also be furnished.  
(iii) Routine tests certificates are required to be submitted.

1.9.5 All cables shall be tested at manufacturer's works in compliance with relevant ISS. All cables and connections after erection shall be tested as required by the employer for :

- i) Pressure Test
- ii) Insulation Resistance Test

1.9.6 Earth resistant shall be measured separately for each earth electrode and when they are connected together and to the equipment should be recorded.

**2.0 Warranty:** - The contractor shall stand guarantee that all the equipments and the works executed under this contract shall be free from all defects and faults in materials, design, workmanship and manufacture and shall be acceptable standards for the contracted works and in full conformity to the technical specifications, drawings and other contract stipulations for a period of 12 months from the date of completion of the project or **15** months from the date of supply of materials whichever is earlier.

**3.0 Completeness of tender:** -

All sundry fittings, assemblies, accessories, hardware items, foundation bolts, termination lugs for electrical connections as required, and all other sundry items which are useful and necessary for proper assembly and efficient working of the various component of the work shall be deemed to have been included in the tender whether such items are specifically mentioned in the tender documents or not.

**4.0 Works to be done by the Contractor:** - Unless and otherwise mentioned in the tender documents, the following work shall be done by the contractor, and therefore, their cost shall be deemed to be included in their tender cost

- i) Cutting and making goods all damages caused during installation and restoring the same to their original finish.
- ii) Sealing of all floor openings provided by him for pipes and cables from fire safety point of view after laying of the same
- iii) Painting at site of all exposed metal surfaces of the installation other than pre-painted items like switch-gear, transformer etc. damages to finished surfaces of these items while handling and erection shall however be rectified to the satisfaction of the Engineer In-Charge.

**5.0 Tools for handling and erection:** - all tools and tackles required for handling of equipments and materials at site of works as well as for their assembly and erection and also necessary testing instruments shall be responsibility of the contractor.

**6.0 Care of Building:**

Care shall be taken by the Contractor to avoid damage to the building during execution of his part of the work. He shall be responsible for repairing of all damages and restoring the same

to their original finish at his cost. He shall also remove at his cost all unwanted and waste materials arising out of his work from the site.

## 7.0 Structural Alterations to Buildings

- i) No structural member in the building shall be damaged / altered, without prior approval of the competent authority through the Engineer-in-charge.
- ii) Structural provisions like openings, cutouts, if any, provided by the department for the work, shall be used. Where these require modifications, or where fresh provisions are required to be made, such contingent works shall be carried out by the Contractor at his cost.
- iii) All such openings in floors provided by the Department shall be closed by the Contractor after installing the cables / conduits / rising mains etc. as the case may be, by any suitable means as approved by the Engineer-in-charge without any extra payment.
- iv) All chases required in connection with the electrical works shall be provided and filled by the Contractor at his own cost to the original architectural finish of the buildings.

8.0 Any concealed work must be given enough opportunity for inspection by the employer and after clearance of the said work concealment can be done by the Contractor.

## CHAPTER 2 *Technical SPECIFICATION*

### 1.0 Conformity to IE Act, IE Rules, and Standards:

- i) All electrical works shall be carried out in accordance with the provisions of Indian Electricity Act, 1910 and Indian Electricity Rules, 1956 amended up to date.
- ii) The works shall also conform to relevant Indian Standard Codes of Practice (COP) for the type of work involved.
- iii) In all electrical installation works, relevant safety codes of practice shall be followed.
- iv) **Unless otherwise specified, the work shall be carried out as per CPWD General Specifications for Electrical Works (Internal & external) as applicable as per the instruction of the Engineer-in-Charge or his authorized representative.**

### 2.0 Workmanship :

- i) Good workmanship is an essential requirement to be complied with. The entire work of manufacture / fabrication, assembly and installation shall conform to sound engineering practice involving highly skilled workers.
- ii) The work shall be carried out under the direct supervision of a highly experienced licensed SUPERVISOR, i.e. a person holding a certificate of competency issued by the State Govt. for the type of work involved, employed by the contractor, who shall rectify the defects pointed out by the Engineer-in-charge during the progress of work.

### 3.0 General requirements and components: -

- i) Quality of Materials: -
  - a) All the materials and equipments supplied by the contractor shall be new. They shall be of such design, size and materials as to satisfactorily function under the rated condition of operation and to withstand the environmental conditions at site.



- b) All the components shall conform to relevant IS specification wherever existing. Materials with ISI certification marked shall be preferred if not otherwise mentioned the tender.
- c) For items of materials for which makes are approved by the Dept., only such approve makes shall be permitted in the work in accordance to the preference of the Engineer-in-Charge of the employer.
- d) **Commissioning on completion:** Before the workman leaves the work finally, the contractor must be sure that the installation is ready for commissioning after due testing.

#### **4.0 Completion plan and completion certificate**

- i) For all the works, completion certificate after completion of work as given in 'Appendix-A' shall be submitted to the Engineer In-Charge.
- ii) 'As built' drawing to be submitted along-with Test/completion certificate which is an essential part for consideration of final bill.

#### **5.0 Testing & Installation: -**

On completion of installation, the following tests shall be carried out: -

- i) Insulation Resistance Test by appropriate class of Megger
- ii) Earth continuity test
- iii) Earth resistant test by earth Megger.

Testing shall be carried out for the completed installation in presence of the E- in-C or his authorized representative to their satisfaction. All test result shall be recorded and submitted to the Dept. All necessary test instruments for the test shall be arranged by the Contractor if so required by the E-in-C. Calibration certificates may require to be produced on demand by the E-in-C

#### **6.0 Testing of Earth Continuity Path**

The earth continuity conductor, including metal conduits and metallic enclosures of cables in all cases, shall be tested for electric continuity. The electrical resistance of the same along-with the earthing lead, but excluding any added resistance, or earth leakage circuit breaker, measured from the connection with the earth electrode to any point in the earth continuity conductor in the completed installation shall not exceed one ohm.

## Appendix A

### Form of Completion Certificate

I/We certify that the installation detailed below has been in by me/us and tested and that to the best of my/our knowledge belief it complies with Indian Electricity Rules, 1956,

Electrical installation at \_\_\_\_\_

Voltage and system of supply \_\_\_\_\_

1. Particulars of work:

a) Internal Electrical Installation

	No.	Total Load	Type or system of wiring
i) Light point			
ii) Socket point			
a) 5pin 5 Amp.			
b) 6 pin 15 Amp.			

b) Others

2. Earthing: -

- i) Description of earthing electrode
- ii) Number of earth electrode
- iii) Size of main earth lead

3. Test results :

a) Insulation resistance

- i) Insulation resistance of the whole system of conductors to earth

Megaohms

ii) Insulation between the phase conductor and neutral

Between Phase R and neutral

Megaohms

Between Phase Y and neutral

Megaohms

Between Phase B and neutral

Megaohms

iii) Insulation resistance between the phase conductors in case of polyphase supply.

Between Phase R and Phase Y

Megaohms

Between Phase Y and Phase B

Megaohms

Between Phase B and Phase R

Megaohms

b) Earth continuity test- Maximum resistance between any point of the earth continuity conductor including metal conduits and main earthing leads

Ohm

c) Earth Electrode Resistance

Resistance of each earth electrode

i).....Ohm

ii).....Ohm

iii).....Ohm

iv).....Ohm

Signature and name of  
the Supervisor along with  
license no., SCC Part nos. & validity

Signature and Name of the  
Contractor along with License  
number & validity

LIST OF APPROVED MAKES FOR EI WORKS

1.	MCCB	L&T/ABB/Legrand
2.	MCB/MCB DB	Legrand/Hagger's/ABB
3.	TPN Switches & HRC Fuses	L&T /Siemens / GE Power Controls
4.	PVC rigid conduit & accessories	Precision/AKG
5.	Modular type switch & socket	Crabtree/Roma/ABB
6.	Light fixtures & lamps	PHILIPS/WIPRO
7.	Cables a) Upto 1.1KV grade b) Above 1.1KV grade	CCI/Universal/Polycab/NICCO
8.	PVC Insulated Copper wire	FINOLEX/NICCO/KDK
9.	Cable Lugs	Dowell's

**NOTE:**

The makes of material to be used shall be strictly as per choice of Client / Consultant which shall be binding on the contractor. For any item, if no make is mentioned, it will be considered to be ISI marked only.

**INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE**  
**JADAVPUR, KOLKATA-32**

NIT NO;-		DATE;-				
NAME OF WORK: Electrical Renovation Work at Room No, 131 in main building at Inorganic Chem.						
Sl.NO	Descriptions of Work.	Qty	Unit	Rate	Amount	Remarks
01.	Wring for light pt/fan/ with 3x1.5 sq mm. multistarand.11kv.Gratde (Finolex/ KDK/ Havells make) in surface/recessed through heavy duty ISI marked rigid PVC conduit for 20 mm. dia. embedded on wall after necessary chase cutting up to true calling/ false calling height etc. as will be required in order to make only drop line concealed and thereafter on wall/ ceiling by PVC saddle at an interval of 0.5 mtr. maximum including supply & fixing of required PVC boxes and other PVC fitting complete with Modular Switch 5A Crabtree/Roma/ABB/North-West or similar superior make duly approved by IACS authority in connection MS. box with cover plate etc. . and interconnection etc. complete as required with ceiling rose (3plate) having average run of 6Mtrs.	7	Nos.	664		
02.	Wring for power plug/AC starter/working bench etc. with (2x2.5+1x2.5) sq. mm. sized multi stand copper conductor FR PVC insulated cable (Finolex/KDK/Havells make) in surface/recessed PVC rigid conduit (ISI mark) from separate way of MCB DB to power socket broad/ switch board /AC Starter etc. complete as required including connection /end termination etc. as required.	140	RMS	131		
03.	Wring for power plug/AC starter/working bench etc. with (2x4+1x4) sq. mm. sized multi stand copper conductor FR PVC insulated cable (Finolex/KDK/Havells make) in surface/recessed PVC rigid conduit (ISI mark) from separate way of MCB DB to power socket broad/ switch board /AC Starter etc. complete as required including connection /end termination etc. as required.	341	RM	162		
04.	Wring for power plug/AC starter/working bench etc. with (2x6+1x6) sq. mm. sized multi stand copper conductor FR PVC insulated cable (Finolex/KDK/Havells make) in surface/recessed PVC rigid conduit (ISI mark) from separate way of MCB DB to power socket broad/ switch board /AC Starter etc. complete as required including connection /end termination etc. as required.	112	RM	206		

SI. NO	Descriptions of Work.	Qty	Unit	Rate	Amount	Remarks
05	Supply and fixing of TPN 63 A rating MCB (Legrand make) in a DB with connection of cable as required . The MCBs shall be of "C" curve type having 10 KA breaking capacity	2	Nos.	1447		
06.	Supply and fixing of SP 10 A To 32A rating MCB (Legrand make) in a DB with connection of cable as required. The MCBs shall be of "C" curve type having 10 KA breaking capacity.	21	Nos.	141		
07.	Supplying and fixing (Legrand make )20 A DP MCB rating.240/415 volts "C" curve, miniature circuit breaker suitable for inductive load of Four poles enclose ms box with connections, testing and commissioning etc, as required.	1	Nos.	572		
08.	Supply, & fixing of modular type 3x6A and 1x16A 230V 6 pin socket outlet and 3x6A &1x16A piano key Modular type switch (make Crabtree//North West) or similar superior make duly approved by the IACS authority with suitable concealed M.S. box and cover plate 12 module etc. complete with inter connection etc. as required.	4	Nos.	1113		
09.	Supplying and fixing (Legrand make )20A TPN MCB rating 415 volts "C" curve, miniature circuit breaker suitable for inductive load of Four poles MS enclose box with connections, testing and commissioning etc, as required.	3	Nos.	723		
10.	Supply & fixing of 2x28 w tube light With reflector fittings (as per Phillips CAT no TMS 122/228HF) with lamps hanging from the ceiling with double round block & down rod with wire as required.	3	Nos.	2070		
11.	S&L4 core 35 sq mm XLPE insulated PVC sheathed Arm Al conductor cable of Gloster /NICCO make on surface with 1/2mrt.gape aluminum saddles along with all necessary hardwires etc. as required as per direction of Engineer- in- charge.	11	RMS	305		
12.	Four end termination of cable must be gland & fixing double heavy duties copper socket .with PVC tape , nut bolt ,etc as required.	4	Nos.	601		
13.	Supply & laying with cable 4 sq mm copper earthing wire and end termination socked.	12	RMS	77		
14.	Supply & fixing 2 pair 0.5 sq mm FR PVC insulated annealed copper conductor ,Unarmored telephone cable in the existing surface/recessed PVC conduit with RJ II socket as required one Point.	5	RMS	31		

SI. NO	Description of Work.	Qty.	Unit	Rate	Amount	Remarks
15	Supplying & fixing of modular type 2x16/6A-230V 6 pin socket outlet with 2x16A-320V piano key switch of Modular type (make Crabtree/North West) or similar superior make duly approved by the IACS authority with suitable concealed M.S. box and cover plate 6 module etc .complete with inter connection etc. as required.	18	Nos..	733		
16.	Supplying ,Fixing and testing one regulator type 16 inch Crompton Greaves wall fan with connection complete.	1	Nos.	1900		
17.	Dismantling & Fixing this ceiling fan with painting & servicing with good condition the fan.	6	Nos.	300		
18.	Supply & fixing Heavy duties Industrial Exhaust fan EPC Make 18 inch. 920 RPM	2	Nos.	4000		
19.	Supply & Fixing(under rack)2 fit tube light.(make Philips model AdrenoV2 14 wtwg207.)	1	Nos.	450		
20.	Supplying & fixing of modular type 4x16/6A-230V 6 pin socket outlet with 4x16A-320V piano key switch of Modular type (make Crabtree/North West) or similar superior make duly approved by the IACS authority with suitable concealed M.S. box One, and cover plate 6 module etc .complete with inter connection etc. As required.	5	Nos.	1466		
21.	Wring g for circuit sub main wiring along with earth wire with the following sizes of FR PVC insulated copper conductor, single core cable in recessed medium class PVC conduit as required.4x6 sq mm.+2x6 sq. mm. earth wire. make Finolex.	40	RMS	358		
22.	Supply and fixing following way prewired TP7N MCB distribution board of steel 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, detachable gland plate, interconnections, powder painted including earthling etc. as required. (But without MCB/RCCB/ISOLATOR).12 way (4+36),Double door. Make Legand.	1	Nos.	11042		
				<b>TOTAL=</b>		

23.	Miscellaneous Works including new work , procurement of new item as per the requirement of the Engineer in Charge to expedite the work @ 10% of the total amount up to previous item					
		<b>GRAND TOTAL=</b>				

***Signature of the Contractor with seal and Date***