



INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR
KHARAGPUR, WEST BENGAL 721302

TENDER DOCUMENT

for

Electrical Maintenance Work in Institute Main Building,
different Departments/Centers/Schools etc. (Chemical Engg.,
Mat. Sc. & School of Water Resources) under Institute
Academic area at IIT Kharagpur.

NIT No. IIT/E/E&M/T/85/2018-19

Notice Invitation Tender Serial No. IIT/E/E&M/T/85/2018-19 dated-06.02.2019

Tender Serial No. _____ Issued to:

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1. NOTICE INVITING TENDER**1.1. INTRODUCTION**

Indian Institute of Technology (IIT) Kharagpur, hereinafter called IITKGP, invites sealed tenders from the eligible contractors for **“Electrical Maintenance Work in Institute Main Building, different Departments/Centers/Schools etc. (Chemical Engg., Mat. Sc. & School of Water Resources) under Institute Academic area at IIT Kharagpur”**. Particulars of the project are as following.

1.2. PARTICULARS

1.NIT Number	NIT No. IIT/E/E&M/T/85/2018-19
2.Name of Work	Electrical Maintenance Work in Institute Main Building, different Departments/Centers/Schools etc. (Chemical Engg., Mat. Sc. & School of Water Resources) under Institute Academic area at IIT Kharagpur.
3.Location of Work	Chemical Engg., Mat. Sc. & School of Water Resources under Institute Academic area at IIT Kharagpur.
4.Estimated Cost(including GST)	₹ 2 57 988/- (Rupees Two Lakhs Fifty Seven Thousand Eighty Eight only)
5.Earnest Money Deposit	₹ 5160 /- (Rupees Seven Thousand Two Hundred and Sixty only)
6.Time Limit	60 days.
7.Tender Fee	₹ 5,00/- (Non-refundable)
8.Tender Basis and Mode	Single Stage Bidding (Containing Technical Bid & Financial Bid)
9.Mode of Payment to IITKGP (EMD/Tender fee)	Demand Draft / Pay order in favour of IIT Kharagpur payable at Kharagpur.
10.Closing Date & Time for Receipt of bids	20 th Feb 2019 up to 15:30hrs
11.Date& Time for Opening of Bid	20 th Feb 2019 at 16:30hrs
12. Engineer-in-charge and contact details.	Mr. Sabyasachi Ghosh Senior Executive Engineer Tel: 03222-282522_____, Email: sghosh@hijli.iitkgp.ernet.in
13. Address for tender issue, submission and opening	Office of Senior Executive Engineer (Electrical), 1 st Floor, Old Building, IIT Kharagpur, Kharagpur WB 721302
14.Website for full and updated information	https://eprocure.gov.in/cppp/tendersearch; http://www1.iitkgp.ac.in/topfiles/tenders.php

1.3. ELIGIBILITY CRITERIA

- 1.3.1. The bidder must be registered in appropriate class of works with Government organization like CPWD/ PWD/ MES or PSUs or those having experience in similar nature of works awarded by Government / Semi Government Organizations/ Government Funded Autonomous Organization.



- 1.3.2. The bidder must have done at least 1 (ONE) similar work of value of 80% of the estimated cost for civil works or 2 (TWO) similar works for projects each of value 60% of the estimated cost for civil works or 3 (THREE) similar work for projects each of value 40% of the estimated cost for Civil Works with Government/ Semi-government/ PSU/ Government Funded Autonomous Organization during last 7 (seven) years preceding last date of the month of tender submission.

Note:

- (i) The estimated cost is Rs. 2 57 988/- (Rupees Two Lakhs Fifty Seven Thousand Eighty Eight only)
- (ii) The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion to the last date of receipt of applications for tender.
- (iii) **Similar works shall mean:** Electrical works.

1.3.3. Special condition for associate consultant:

This work includes an item in Part II of BoQ for detailed design and drawing work including structural and architectural, electrical, S&P. Bidders shall associate themselves with the consultant eligible for comprehensive consultancy work at least for 1 (one) similar project costing 80% of the estimated cost or 2 (two) similar projects for each value 60% of the estimated cost or 3 (three) similar projects each value 40% of the estimated cost.

The bidder has to submit document in support of eligibility of their associate consultant.

- 1.3.4. The bidder or the specialized agency the bidder intends to associate with must be registered with appropriate government authority as a bonafide business entity and must have GST registration certificate and Permanent Account Number of income tax.

- 1.3.5. Electrical work shall be executed by selected bidder through agency holding electrical license and electrical supervisor license valid on date of execution.

- 1.3.6. The validity of the registrations and licenses should be valid as on the date of tender submission.

- 1.3.7. Average annual turnover of the bidder as per ITCC or profit & loss statement shall not be less than 30% of the estimated cost, not having incurred loss in more than two years, during last 5 years ending 31 Mar 2018.

- 1.3.8. Bidder must hold solvency certificate from any scheduled banks for a minimum value of 40% of the estimated cost, issued not earlier than 6 (six) months from the last date of submission.

Sd/-

Sr. Executive Engineer (Electrical)

On behalf of the Director, Indian Institute of Technology Kharagpur

Copy to:

- 1) Registrar
- 2) Chief Engineer
- 3) Superintending Engineer (E&M)
- 4) Chief System Manager
- 5) Mr. M. Kumar, Senior Executive Engineer (EW)
- 6) Executive Engineer (Telephone)
- 7) Engineer/Assistant Engineer/ Junior Engineer (E&M)
- 8) Notice Board
- 9) Tender Notice uploaded to CPPP portal & Institute Website

Office file



2. INFORMATION TO BIDDERS

2.1. SCOPE OF WORK

- 2.1.1. The IITKGP intends to award the work of “**Electrical Maintenance Work in Institute Main Building, different Departments/Centers/Schools etc. (Chemical Engg., Mat. Sc. & School of Water Resources) under Institute Academic area at IIT Kharagpur**”.. The work consists of comprehensive repair, renovation and modification of existing electrical systems.
- 2.1.2. The vendor shall work out execution sequence and methodology so as to complete the project within the envisaged time and the estimated cost, duly handling the constraint mentioned above.

2.2. GENERAL INSTRUCTIONS

- 2.2.1. Bidding documents are to be obtained electronically through websites: <https://eprocure.gov.in/cppp/tendersearch>; <http://www1.iitkgp.ac.in/topfiles/tenders.php>. The tender fee in the prescribed mode must accompany the tender documents issued electronically at the time of submission.
- 2.2.2. This bid document shall be read in conjunction with GCC (General Conditions of Contract) available on <http://www1.iitkgp.ac.in/topfiles/tenders.php>.
- 2.2.3. The bidder shall visit and inspect the site and obtain all information on his own responsibility and at own cost, which may be necessary for the purpose of quoting and submitting the tender. No excuse or ignorance as to site conditions and local information shall be accepted after awarding of the contract. Access to the site will be granted by the Engineer-in-charge on all working days within working hours.
- 2.2.4. IITKGP shall not provide any space at site for labour hutments.
- 2.2.5. All clarifications about the tender shall be sought by bidder on or before **20th Feb 2019 1.00 PM** through e-mail to the Engineer-in-charge on sghosh@hijli.iitkgp.ernet.in.
- 2.2.6. Completion certificate issued by Competent Authority will only be considered as credential. If the Completion certificate issued by Competent Authority does not reflect the type of work, then Final bill / Schedule of Quantity of the qualifying works also to be attached along with the Completion certificates. Certificate from private individuals / organizations for whom such works have been executed shall not be accepted.
- 2.2.7. The bidding document (consisting of specifications, the schedule of quantities of various types of items to be executed, the set of terms and conditions of the contract and other documents / drawings, if any), Corrigenda, Clarifications to Pre-bid queries can be downloaded from the websites: <https://eprocure.gov.in/cppp/tendersearch>; <http://www1.iitkgp.ac.in/topfiles/tenders.php>. Corrigenda, if any shall be published only on these websites. The institute shall not be responsible for any delay / difficulties / inaccessibility of downloading facility for any reason whatsoever.
- 2.2.8. All costs, charges & expenses that may be incurred in connection with the preparation of his tender shall be borne by him and the Institute accepts no liability whatsoever therefore.
- 2.2.9. **Rates quoted by the bidders shall be inclusive of GST (Goods and Services Tax - Central, State and Interstate) and all applicable taxes. Income Tax and all other statutory deductions like labour cess etc. will be deducted from the bill as per prevailing rules.**
- 2.2.10. Exemption to IITKGP against any tax/ duty/ fee/ surcharge/ charge/ cost, if any, found applicable or sought later from IITKGP after award shall be passed on to IITKGP by the contractor without dispute.
- 2.2.11. IITKGP reserves the right to reject any or all of the bids without assigning any reason.
- 2.2.12. **Bid Validity:** Bid shall remain valid for 120 days from the date of submission.
- 2.2.13. **Firm Price: Bidder's quoted Rates/Prices for executing the activities under the Contract shall remain firm till completion of the entire work & shall not attract any escalation under any circumstances whatsoever.**
- 2.2.14. If any information furnished by the bidder is found as false / fabricated, then his bid will be rejected and treated as cancelled. Even if the such manipulation is detected at any stage after signing of the contract, it would lead to termination of the contract besides forfeiture of Earnest Money Deposit and liabilities towards prosecution. In such cases the bidder will be debarred from participation in future tendering process in IITKGP for next 05 (Five) years.
- 2.2.15. **Earnest Money Deposit (EMD)** of requisite amount and that in prescribed mode or proof of payment thereof shall be enclosed with the Technical Bid explained in following section.



- 2.2.16. Refund / Conversion of Earnest Money Deposit:** The Earnest Money received shall be refunded to the unsuccessful bidders without any interest after the opening of financial bids. The Earnest Money Deposit of successful bidder shall be retained and converted into part of Security Deposit.
- 2.2.17. Forfeiture of Earnest Money Deposit:** Earnest Money Deposit will be forfeited in any of the following cases:
- The bidder withdraws / modifies his tender during the period of Bid Validity.
 - The bidder, in case of tie between lowest bids, refuse to submit revised offer.
 - The bidder does not accept the correction of arithmetical errors of his tender.
 - The bidder fails to deposit Performance Guarantee and information as per format given in GCC within the stipulated time period before award of the work.

2.3. SUBMISSION OF TENDER

- 2.3.1.** The sealed tenders shall be received at the Office of Senior Executive Engineer (Electrical), 1st Floor, Old Building, IIT Kharagpur, Kharagpur WB 721302, up to **15:30hrs, 20th Feb 2019** or Corrigenda otherwise.
- 2.3.2.** Tenders received after the due date and time shall not be considered.
- 2.3.3.** Tenders shall be submitted in a sealed Master envelope super scribed **“Electrical Maintenance Work in Institute Main Building, different Departments/Centers/Schools etc. (Chemical Engg., Mat. Sc. & School of Water Resources) under Institute Academic area at IIT Kharagpur..”** with NIT No. **IIT/E/E&M/T/85/2018-19 as NIT No.**, containing three separate sealed covers, each clearly super scribed as **“Tender Fee and EMD ”, “Technical Bid”** and **“Financial Bid”** respectively, in the following manner:
- 2.3.4. Envelope-1 (Tender FEE & EMD)** will consist of:
- Tender Fee for ₹ 5,00/- (Non-refundable), in the prescribed** mode or proof of payment thereof.
 - Earnest Money Deposit** of requisite amount, in the prescribed mode or proof of payment thereof.
- 2.3.5.** Tender without payment of Earnest Money Deposit would be summarily rejected.
- 2.3.6. Envelope-2 (Technical Bid)** will consist of:
- Covering letter of the offer signed by firm’s authorized signatory.
 - Documents establishing the identity and authenticity of the bidder/ bidding firm
 - Self-certified copies of all the documents in support of eligibility of bidder.
 - Self-certified copies of all the documents in support of eligibility of proposed/associated agencies for specialized services.
- 2.3.7. Envelope-2 (Financial Bid)** will consist of the complete tender document, each page duly signed and stamped by the bidder as acceptance of the conditions, Declaration by Bidder and **Financial Bid** all duly filled-in, signed by the bidder or his/her authorized signatory and stamped.

2.4. EVALUATION OF BIDS AND AWARD OF WORK

- 2.4.1.** The Bid of bidder will be opened on the specified date and time of opening at the Office of Senior Executive Engineer (Electrical), 1st Floor, Old Building, IIT Kharagpur, Kharagpur WB 721302 in the presence of willing bidders or their authorized representatives.
- 2.4.2.** Date, time and place of opening of Financial Bid will be informed after evaluation of Technical Bid to the Technically Qualified Bidders.
- 2.4.3.** Bids shall, first, be checked for payment of **Tender Fee** and **Earnest Money Deposit**. Only those bids found to have duly paid/ submitted Tender Fee and Earnest Money Deposit shall be considered for evaluation.
- 2.4.4.** Evaluation of **Technical Bid:** The bids received will then be assessed on the eligibility criteria mentioned at para 1.3 of Notice Inviting Tender. Bids found not meeting the eligibility criteria shall be considered non-responsive and shall be rejected summarily.
- 2.4.5.** IITKGP retains the right to revert back to individual bidders with further clarifications / queries on the Technical Bid. The bidder has to respond to the queries within the specified time mentioned in the covering letter.
- 2.4.6.** On the date & time specified for opening of Financial Bid or the Revised Financial Bids as the case may be will be opened on specified date and time.



- 2.4.7. **EVALUATION OF Financial Bids:** The Financial Bid should contain the complete bid document with duly filled in Schedule of Financial Quote. Financial Bids opened as above will be checked for arithmetical errors.
- 2.4.8. The successful bidder shall be issued Letter of Acceptance (LOA) of the bid, and be required to furnish a Performance Guarantee as per General Conditions of Contract, Program Schedule with specific Milestones to be achieved as to complete the work within the stipulated time limit and details of his Technical Staff to be deployed as per ANNEXURE-I
- 2.4.9. **Letter of Award (Work Order)** shall be issued to the successful bidder only after receipt of the Performance Guarantee, along with Program Schedule and the details of Technical Staff to be deployed for the work.
- 2.4.10. **Agreement (Contract)** consisting of complete tender document including conditions, bill of quantities, technical proposal and specialized services, drawings, if any, and acceptance thereof together with any correspondence leading thereto, shall be drawn and signed with the awardee **within 10 days** of the Letter of Award.
- 2.4.11. **Date of start** of work shall be reckoned from **the 7th day** of the issue of the Work Order.
- 2.4.12. **Defect Liability Period (DLP):** In partial modification to clause no.16 of General Conditions of Contract (GCC), the Defect Liability Period shall be 12 months after the certificate final or otherwise of its completion of work or till the final bill has been prepared.



3. UNDERTAKING BY THE BIDDER**UNDERTAKING**

I / We have read and examined the Tender document including terms & conditions, specifications, bill of quantities, drawings and designs, general rules & directions, General Conditions of Contract, Special Conditions of Contract and all relevant other documents, publications and rules referred to in the Conditions of Contract and all other contents in the tender documents for the work.

I / We, hereby tender for execution of the work specified for the Indian Institute of Technology Kharagpur within the time specified and in accordance in all respects with the specifications, designs, drawings and instructions in writing.

We agree to keep the tender open for 120 days from the last date of its submission and not to make any modifications in its terms and conditions. A sum of Rs. _____ has been deposited in cash / demand draft of a scheduled bank / Pay order as earnest money. If I / we, fail to furnish the prescribed performance guarantee within prescribed period, I / we agree that the said Director, Indian Institute of Technology Kharagpur or his authorized officer shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely. Further, if I / we fail to commence work as specified, I / we agree that the Director, Indian Institute of Technology Kharagpur shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein.

Further, I / We agree that in case of forfeiture of earnest money or both Earnest Money & Performance Guarantee as aforesaid, I / We shall be debarred for participation in the re-tendering process of the work.

I / We hereby declare that I / We shall treat the tender documents, drawings and other records connected with the work as secret / confidential documents and shall not communicate information derived there-from to any person other than a person to whom I / We am / are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Seal & Signature of Contractor

Postal Address

Dated

Witness

Address

Occupation



ANNEXURE-I

TECHNICAL STAFF OF CONTRACTOR

DISCIPLINE	NAME	QUALIFICATION	EXPERIENCE	CONTACT NUMBER
Overall Project In-charge				
Engineer - Structure and Civil Works				
Engineer – Electrical & Mechanical Works				
In-charge - Safety, Health & Environment				

Seal & Signature of Contractor



भारतीय प्रौद्योगिकी संस्थान खड़गपुर

INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

4. SCHEDULE OF QUANTITIES

Name of the Work: Electrical Maintenance Work in Institute Main Building, different Departments/Centers/Schools etc. (Chemical Engg., Mat. Sc. & School of Water Resources) under Institute Academic area at IIT Kharagpur.

Sl. No.	Description of Items	Unit	Qty.	Rate	Amount
1	Wiring for light point / fan point / call bell point / exhaust fan point with 1.5 sq mm FRLS PVCinsulated copper conductor single core cable in surface / recessed medium class PVC conduit,with modular switch, modular plate, suitable size GI box and earthing the point with 1.5 sq mm,1.1 kV, FRLS PVCinsulated copper conductor single core cable etc as required . Make(FRLS Wire):- Finolex/RR Kabel/Polycab/Havells/KEI/Equivalent approved by Engineer-in Charge Make (Switch,Socket,Blank plate etc):- Crabtree Thames platinum range/WiproNova/ LegrandMyrius range/MK(Wraparound Plus)/Equivalent approved by Engineer-in Charge Make (MMS Pipe):- Prestoplast/Precision/AKG/Equivalent approved by Engineer-in Charge				
a)	Upto 6 metres.	Point	7		
b)	Above 6 metres .	Point	7		
2	Wiring for circuit / submain wiring alongwith earth wire with the following sizes of FRLS PVC insulated copper conductor , single core cable in surface / recessed medium class PVC conduit as required . Make (FRLS Wire):- Finolex/RR Kabel/Polycab/Havells/KEI/Equivalent approved by Engineer-in Charge Make (MMS Pipe):- Presto plast/Precision/AKG/Equivalent approved by Engineer-in Charge				
a)	2 X 2.5 sq mm + 1 X 2.5 sq mm for E.C.C	Mtr.	178		
b)	2 X 4 sq mm + 1 X 4 sq mm for E.C.C	Mtr.	110		
c)	2 X 6 sq mm + 1 X 6 sq mm for E.C.C	Mtr.	30		
d)	2 X 10 sq mm + 1 X 6 sq mm for E.C.C	Mtr.	2		
e)	2 X 16 sq mm + 1 X 6 sq mm for E.C.C	Mtr.	2		
f)	4 X 4 sq mm + 2 X 4 sq mm for E.C.C	Mtr.	2		
g)	4 X 6 sq mm + 2 X 6 sq mm for E.C.C	Mtr.	80		
h)	4 X 10 sq mm + 2 X 6 sq mm for E.C.C	Mtr.	5		
i)	4 X 16 sq mm + 2 X 6 sq mm for E.C.C	Mtr.	25		
3	Supplying and fixing following sizes / modules ,GI box along with modular base & cover plate for modular switches in recess etc as required . Make:- Crabtree Thames platinum range/Wipro Nova/Legrand Myrius range/MK (Wraparound Plus)/Equivalent approved by Engineer-in Charge				
a)	3 Module	Each	1		
b)	6 Module	Each	27		
c)	12 Module	Each	1		



4	Supplying and fixing following modular switch / socket on the existing modular plate & switch box including connections but excluding modular plate etc as required . Make:- Crabtree Thames platinum range/Wipro Nova/Legrand Myrius range/MK (Wraparound Plus)/Equivalent approved by Engineer-in Charge				
a)	5 /6 Amps Switch	Each	33		
b)	15 /16 Amps Switch	Each	25		
c)	3 pin 5 /6 Amps Socket Outlet	Each	33		
d)	6 pin 15 / 16 Amps Socket Outlet	Each	25		
5	Supplying and fixing Two Module stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required. Make:- Crabtree Thames platinum range/Wipro Nova/Legrand Myrius range/MK (Wraparound Plus)/Equivalent approved by Engineer-in Charge	Each	2		
6	Supplying & Fixing suitable size GI box with modular plate and cover in front on surface or in recess,including providing and fixing 25 Amps modular socket outlet and 25 Amps modular SP MCB, "C" curve including connections,painting etc.as required. Make:- Crabtree Thames platinum range/Wipro Nova/Legrand Myrius range/MK (Wraparound Plus)/Equivalent approved by Engineer-in Charge	Each	2		
7	Supplying and Fixing of LED Fitting with one no 04 feet LED,240 Volt Polycarbonate tube (Universal Batten for T5 and T8 Lamp) with all connection complete with 3 X 1.5 sq.mm. flexible copper wire.The LED shall be ≥ 1800 Lumen,Efficacy ≥ 100 Lm/Watt,CRI ≥ 80 ,pf ≥ 0.95 ,THD $\leq 15\%$,CCT ≥ 5700 K,IP 20.All the luminaires should be warranted for 5 years at site with free of cost.Permanent numbering of LED luminaires are mandatory during installation at site. Make:- Havells/Bajaj/Philips/Equivalent approved by Engineer-in Charge	Each	4		
8	Supplying and Fixing of LED Fitting with Two no 04 feet LED,240 Volt,Polycarbonate tube (Universal Batten for T5 and T8 Lamp) with all connection complete with 3 X 1.5 sq.mm. flexible copper wire.The LED shall be ≥ 1800 Lumen,Efficacy ≥ 100 Lm/Watt,CRI ≥ 80 , pf ≥ 0.95 ,THD $\leq 15\%$,CCT ≥ 5700 K,IP 20.All the luminaires should be warranted for 5 years at site with free of cost.Permanent numbering of LED luminaires are mandatory during installation at site. Make:- Havells/Bajaj/Philips/Equivalent approved by Engineer-in Charge	Each	2		
9	Installation , testing and commissioning of pre- wired, fluorescent fitting /compact fluorescent fitting/LED fittings of all types complete with all accessories and tube etc. directly on false ceiling / wall including connection with 3 X1.5 sq mm FRLS PVC insulated copper conductor single core cable and earthing etc as required.	Each	6		
			0		



10	Supplying of 1.1 kV grade, XLPE insulated overall PVC sheathed stranded aluminium conductor flat steel strip armoured cable. Confirming to IS:7098 part-I (A2XFY) 1988 with latest amendments. Make:- Havells/Gloster/Nicco/RPG/KEI/Equivalent approved by Engineer-in Charge				
a)	3.5 Core 70 sq.mm	Mtr.	80		
11	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 incl. S+F of 1 X 10 SWG GI wire for E.C.C making holes and manding good the damages to original finish incl painting.(Cable Dept supply)				
a)	Above 35 sq mm and upto 95 sq mm (clamped with 25 X 3 mm MS flat clamp)	Mtr.	10		
12	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 along with S+F of 10 SWG GI wire as earth wire as required.				
a)	Above 35 sq. mm and upto 95 sq. mm (clamped with 25 X 3mm MS flat clamp @ 3 sets per metre.)	Mtr.	60		
13	Supplying and making End Termination with brass compression gland and lugs for following size of PVC insulated and PVC sheathed/XLPE aluminium conductor cable of 1.1 kV grade as required. Make:- ARUN/Dowells/Equivalent approved by Engineer-in Charge				
a)	3.5 X 70 sq mm	Each	2		
14	Supplying and fixing DP sheet steel Enclosure on surface/recess along with 25/32 Amps ,415 V "C" curve DP MCB complete with connection, testing and commissioning etc.as required. Make:- Legrand/Hager/L&T/Siemens/Schneider/Equivalent approved by Engineer-in Charge	Each	1		
15	Supplying and fixing TPN sheet steel Enclosure on surface/recess along with 16/25/32 Amps , 415 V "C" curve TPN MCB complete with connection, testing and commissioning etc.as required. Make:- Legrand/Hager/L&T/Siemens/Schneider/Equivalent approved by Engineer-in Charge	Each	1		
16	Supplying and Fixing DP/4P Sheet Steel Enclosure on surface/recess complete with connection, testing and commissioning etc.as required with out MCB Make:- Legrand (5077 91/93)/Hager/L&T/Siemens/Schneider/Equivalent approved by Engineer-in Charge				
a)	Two Pole Enclosure for MCB	Each	1		
b)	Four Pole Enclosure for MCB	Each	1		
17	Supplying and fixing 32 Amps ,415 Volt TPN Industrial type socket outlet,with 4 pole and earth,metal enclosed plug top alongwith 32 Amps ,"C"curve, TPN,MCB, in sheet steel enclosure,on surface or in recess with chained metal cover for the socket out let and complete with connections,testing and commissioning etc,as required. Make:- Legrand/Hager/L&T/Siemens/Schneider/Equivalent approved by Engineer-in Charge	Each	3		



18	Supplying and fixing 63 Amps ,415 Volt TPN Industrial type socket outlet,with 4 pole and earth (3P +N+E+FP),metal enclosed plug top alongwith 63 Amps ,"C" curve, TPN,MCB, in sheet steel enclosure,on surface or in recess with chained metal cover for the socket out let and complete with connections,testing and commissioning etc,as required. Make:- Legrand (5078 64/4086 83)/Hager/L&T/Siemens/Schneider/Equivalent approved by Engineer-in Charge	Each	1		
19	Fixing only 240V SPN/415V TPN Sheet Steel Main Switch or DP/TP/FP sheet steel enclosure or SP/TP Industrial Plug,Socket directly on surface / recessed /on flat iron legs on wall along with required DP/TP/FP MCB including necessary connection, testing as required. (Enclosure/Main switch / Industrial Socket : Department supply).	Each	1		
20	Supplying and fixing following way, Single Pole and Neutral , IP-43, sheet steel, MCB distribution board, 240 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator) Make:- Legrand/Hager/L&T/Equivalent approved by Engineer-in Charge				
a)	8 Way , Double door	Each	1		
b)	12 Way Double door	Each	1		
21	Supplying and fixing double door Vertical TPN MCB Distribution board for MCCB Incomer IP-42/43 protection, on angle iron frame on wall & mending good the damages to original finish incl. Inter connection with suitable size of copper wire and neutral link & provisionfor earthing attachment Up to 160A				
a)	8 Way Double door (Enclosure - 6079 14) Make:- Legrand (6079 14) /Hager/L&T/Equivalent approved by Engineer-in Charge	Each	1		
22	Fixing of followings directly on surface / recessed /on flat iron legs on wall including necessary connection as required. (DBs/ switch fuse unit : Department supply).				
a)	SPN MCB DB (4 to 16 way)	Each	1		
b)	TPN MCB DB (4 to 12 way)	Each	1		
23	Supplying and fixing 5 Amps to 32 Amps rating, 240/415 V,10 kA,"C" curve,miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required. Make:- Legrand/Hager/L&T/Siemens/Schneider/Equivalent approved by Engineer-in Charge				
a)	Single Pole	Each	24		
b)	Double Pole	Each	4		
c)	Triple Pole	Each	4		
d)	Triple Pole and Neutral	Each	3		



24	Supplying and fixing 40 Amps to 63Amps rating, 240/415 V,10 kA,“C” curve, Miniature Circuit breaker suitable for inductive load of following poles in the existing MCB DB or in enclosure complete with connections, testing and commissioning etc. as required. Make:- Legrand (4085 98/4086 39/4086 61/4087 02)/Hager/L&T/Siemens/Schneider/Equivalent approved by Engineer-in Charge				
a)	Triple Pole	Each	2		
b)	Four Pole	Each	2		
25	Supplying and fixing of Molded Case Circuit Breaker,415 Volt, 25 kA,with Icu = Ics (for i sec),adjustable overload setting (Thermal Magnetic) with two sets copper spreader terminals suitable for inductive load of following poles in the existing MCB/MCCB DB or in enclosure complete with connections, testing and commissioning etc. as required. Make:- Legrand (4200 56/6250 06/4200 57)/Hager/L&T/Siemens/Schneider/Equivalent approved by Engineer-in Charge				
a)	160 Amps, Four Pole	Each	1		
26	Dismantling of Light Fitting / Fans / SPN DB/ TPN DB/Main Switch /Main Supply Panel / existing old wiring,cable etc and shifting to site store including mending good damages to original finish.				
a)	Light Fitting/Celling Fan/Wall Fan/Exhaust Fan/Industrial plug & Socket DB/Metal Enclosure etc.	Each	4		
b)	TPN DB/SPN DB/Main Switch etc.including accessories & old cable/Wiring	Each	4		
c)	Medium Size main supply Panel etc. including accessories & old cable/Wiring	Each	1		
		Total			

Total amount in words **inclusive GST** (Please mention applicable GST %):

- 1) All materials to be used after prior approval of Engineer in charge.
- 2) All electrical work includes dismantling of old items in respective area and depositing them to the store with proper documentation
- 3) Copper Socketing above 4 sq.mm size are required for all end terminations with copper wire.These are to be strictly followed.
- 4) No twisting joints are allowed in any cases.Suitable connectors/Ceiling roses are to be used in switch/ Power Board and ceiling rose
- 5) Laying of conduits on false ceiling are not allowed,the conduits are to be laid on wall/ceiling for connection to the points on false ceiling
- 6) Suitable glanding of the cables are to be done for cable end terminals brass.
- 7) G.I anti rust screws are to be used during fixing of pipes,cables conduits light fittings etc. on wall.
- 8) Valid challans and test/Certificates of all the materials supplied by the contractor are to be submitted before execution of work.



Make list format

Name of the Work: Electrical Maintenance Work in Institute Main Building, different Departments/Centers/Schools etc. (Chemical Engg., Mat. Sc. & School of Water Resources) under Institute Academic area at IIT Kharagpur.

Sl. No.	Description of items	Approved makes proposed by the contractor	Makes approved by the Department
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Signature of E (EW)

Signature of Sr.E.E.(EW)

Signature of S.E (E&M)





Special Condition for Electrical work

1. The work shall be carried out as per national code or C. P. W. D specifications for works with correction slips issued up-to date unless otherwise specified in the schedule of quantities for the works.
2. The following Indian Standard Specifications and Codes of Practice will apply to the equipment and the work covered by the scope of this contract. In addition the relevant clauses of the Indian Electricity Act 1910 and Indian Electricity Rules 1956 as amended upto date shall also apply. Wherever appropriate Indian Standards are not available, relevant British and/or IEC Standards shall be applicable.

BIS certified equipment shall be used as a part of the Contract in line with Government regulations. Necessary test certificates in support of the certification shall be submitted prior to supply of the equipment.

It is to be noted that updated and current Standards shall be applicable irrespective of those listed below.

Low voltage Switchgear and Controlgear specifications IS 13947 : 1993

Part I – General

Part 2 – Circuit Breakers

Part 3 – Switch Fuse Units

Part 4 – Contactors and Motor Starters

Part 5 – Control Circuit Devices

Electrical Relays for power system protection IS 3231 : 1986

Low voltage Switchgear and Control gear assemblies IS 8623 : 1993

Marking of Switchgear busbars IS 11353 : 1985

Degree of Protection of Enclosures for low voltage switchgear IS 2147 : 1962

Code of Practice for selection, installation and maintenance of Switchgear IS 10118 : 1982

4. No under-ground work or above the false ceiling shall be covered until the same has got approved by the Engineer-in-charge. The contractor will supply the drawings of specific works for approval, if required
5. All the old wiring has to be dismantled with proper care. The reusable old materials if any are to be handed over to departmental store with proper documentation and the other non reusable (nil reselling value) will be disposed by the contractor. The contractor shall clear the site thoroughly of all scaffolding materials & rubbish etc. left out of his work & dress the site around the building to the satisfactions & his decision in writing shall be final & binding on all concerned
6. Special care to be taken to avoid any theft of electrical fittings and fixtures while executing the work.
7. The location of Panel / DB / Switch board / Light point / Fan point will be as per existing location or as per the instruction of Engineer-in-charge.
8. All the wiring will be done with feruling and cable / Wire termination by required size or lugs of required materials and It should be noted that license wire man shall only be allowed for the wiring work.

Electrical safety at work site

The contractor will identify one of the supervisors for taking care of implementation of Safety systems.

The Contractor should follow the following General Guidelines governing the safety rules as laid down under:

Usage of eye protection equipment shall be ensured when workmen are engaged for grinding, chipping, welding and gas-cutting. For other jobs as and when site safety co-coordinator insists eye protection has to be provided.

1. All safety appliances like Safety shoes, Safety gloves, Safety helmet, Safety belt, Safety goggles etc. shall be arranged before starting the job.
2. All excavated pits shall be barricaded & barricading to be maintained till the backfilling is done. Safe approach to be ensured into every excavation.
3. All the dangerous moving parts of the portable / fixed machinery being used shall be adequately guarded.
4. Ladders being used at site shall be adequately secured at bottom and top. Ladders shall not be used as work platforms.
5. Material shall not be thrown from the height. If required, the area shall be barricaded and one person shall be posted outside the barricading for preventing the tre-passers from entering the area.
6. Other than electricians no one is allowed to carry out electrical connections, repairs on electrical equipment or other jobs related thereto.
7. All electrical connections shall be made using 3 or 5 core cables, having a earth wire.
8. Inserting of bare wires for tapping the power from electrical sockets is completely prohibited.
9. A tools and tackles inspection register must be maintained and updated regularly.
10. Debris, scrap and other materials to be cleared from time to time from the workplace and at the time of closing of work every day.
11. All the unsafe conditions, unsafe acts identified by contractors, reported by site supervisors and / or safety personnel to be corrected on priority basis.
12. No children shall be allowed to enter the workplace.
13. All the lifting tools and tackles shall be stored properly when not in use.
14. Clamps shall be used on Return cables to ensure proper earthing for welding works.
15. All the pressure gauges used in gas cutting apparatus shall be in good working condition.
16. Proper eye washing facilities shall be made in areas where chemicals are handled.
17. Connectors and hose clamps are used for making welding hose connections.
18. All underground cables for supplying construction power shall be routed using conduit pipes.
19. Spill trays shall be used to contain the oil spills while transferring / storing them.
20. Tapping of power by cutting electric cables in between must be avoided. Proper junction boxes must be used.
21. Non-compliance to above shall invite a penalty recovery as per 3.22.8.

