

**Tender Document**  
**For**  
**Centralized Air Conditioning (HVAC) work of Administration**  
**Building at Central University of Rajasthan.**

NIT No.	: CURAJ/R/F.150/2023/1761
NIT Issue Date	: 25.08.2023
Estimated Cost	: Rs. 2.28 Crore
Last Date of Submission	: 18.09.2023 upto 2.00 PM
Technical Bid Opening	: 18.08.2023 at 3.00 PM



**CENTRAL UNIVERSITY OF RAJASTHAN**  
**NH-8, Bandarsindri, Kishangarh, Dist.- Ajmer, Rajasthan – 305817**  
**[www.curaj.ac.in](http://www.curaj.ac.in)**

## INDEX

**Name of Work:** Centralized Air Conditioning (HVAC) work of Administration Building at Central University of Rajasthan  
**NIT No.** CURAJ/R/F.150/2023/1761 dated 25.08.2023

Sl. No.	Description	Page No.
	Index	1
	Tender Notice	1 - 2
	PART - A	
	Checklist for Contractors for submission of bids	5
	Information & Instruction for Bidder for tendering	6 - 7
	List of documents to be attached with the Technical Bid within the period of submission	8
	Brief Particulars of Work (Section I)	9
	Information & Instruction for Bidder (Section II)	10 – 12
	CPWD Form 6 : Notice Inviting Tender	13 – 17
	CPWD Form 7 (Standard CPWD contract Form -Percentage rate tender), Acceptance	18 – 19
	Form of Agreement	20 – 21
	Schedule A to F for composite work (Electrical & Civil)	22 – 26
	Specimen Format for MOU & Willingness Letter for Appointing Associated Specialized Agency	27 – 31
	Integrity Pact	32 – 36
	PART B	
	General Terms & Conditions	38 – 48
	Technical Specifications For Internal & External EI Works	49 – 52
	Specifications and Conditions for HVAC Works	53 – 54
	Annexure – I to IV (to be enclosed with technical bid)	55 – 61
	Annexure – V (Format of Performance Bank Guarantee)	62 – 63
	Annexure – VI (List of Approved Makes)	64 – 67
	Schedule of Works	68 – 82
	Drawings and Heat Load Calculation	83 – 88

## CENTRAL UNIVERSITY OF RAJASTHAN TENDER NOTICE

The Registrar, Central University of Rajasthan, NH-8, Bandarsindri, Kishangarh-305817 invites sealed **Percentage Rate Tender** from approved and eligible contractors of CPWD and those of appropriate list of MES, BRO, BSNL, Railway and State PWD or Public sector undertakings set up by the central or state government for following work(s):

S. No.	Name of Work	NIT No.	Estimated Cost	Earnest money	Stipulated Period of Completion of work (in months)	Last date & time of submission of Bid	Date & Time of Opening of Technical Bid
1	Centralized Air Conditioning (HVAC) work of Administration Building at Central University of Rajasthan	CURAJ/R/F.150/2023/1761 dated 25.08.2023	<b>Rs. 2.28 Crore</b>	<b>Rs. 4.56 lakh</b>	04 months	18.09.2023 till 02.00 PM	18.09.2023 at 03.00 PM

The tender document, forms and other details can be obtained from the O/o The Registrar, Central University of Rajasthan, NH-8, Bandarsindri, Kishangarh -305817 or can be downloaded from the University website [www.curaj.ac.in](http://www.curaj.ac.in) and CPP Portal.

**Registrar**  
**Central University of Rajasthan**

# **PART- A**

## **CHECK LIST FOR CONTRACTORS FOR SUBMISSION OF BIDS**

1. The tenderer should read all the instructions, terms & Conditions, contract clause, nomenclature of items, specifications etc. contained in the tender documents very carefully, before quoting the rates. The tenderer should also read the General Conditions of Contract 2020 for construction works in lines with schedule F, with upto date correction slips upto date of submission of bids.
2. The agency shall quote the percentage rate for complete scope of work in both words and figures in the financial bid.
3. The bidders shall quote his rates keeping in mind the scope of work, specifications, terms & conditions, additional conditions and special conditions etc. and nothing shall be payable extra what so ever unless otherwise specified.
4. In the event of the tender being submitted by a firm, it must be signed separately by each partner thereof or in the event of the absence of any partner, it must be signed on his behalf by a person holding a power of attorney authorizing him to do so. Such power of attorney should be produced with the tender and it must be disclosed that the firm is duly registered under the Indian partnership act, 1952.
5. GST, Labour Cess etc. as applicable shall be paid by the contractor himself. The department shall deduct from the R/A bills, the TDS as applicable. The contractor shall quote his rates considering all such Taxes.
6. The bidder shall quote their rates considering all prevalent taxes/ cess like GST, Workers Cess or any other tax on material /work as applicable on the last date of bid submission and nothing extra shall be paid to the contractor on this account.
7. Power/ electricity supply DG sets of required capacity required for construction; testing & commissioning shall have to be provided to the contractor on payment basis as per the University norms. Water required for testing of equipment is also in the scope of agency.
8. The Contractor shall note that DLP period for this work is ONE YEAR from the date of completion of work and handing over to client department.
9. Damages to existing infrastructure/equipment done by executing agency due to carelessness/poor quality work shall be compensated by Contractor to Central University of Rajasthan.

### **10. Scope of Drawings:**

The design including heat load, electrical load etc calculation provided by the University are tentative and Contractor may have to provide the same for finalization. The bidder shall quote their rates considering the cost incurred on the same and nothing extra shall be paid to the contractor on this account. If any modification, in Design/drawings is needed as per site conditions, or subsequent to proof checking, the contractor shall do/redo the design without any extra cost. The Contractor shall prepare and supply all the coordinated 'Good for Construction' drawings duly proof checked and approved. The decision of the Engineer- in-charge in this regard shall be final and binding. No claim whatsoever on this account will be entertained on this account.

## INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR TENDERING FORMING PART OF BID DOCUMENT

The Registrar, Central University of Rajasthan, NH-8, Bandarsindri, Kishangarh-305817 invites sealed **Percentage Rate Tender** from approved and eligible contractors of CPWD and those of appropriate list of MES, BRO, BSNL, Railway and State PWD or Public sector undertakings set up by the central or state government for following work(s):

S. No	Name of Work	NIT No.	Estimated Cost	Earnest money	Stipulated Period of Completion of work (in months)	Defect Liability Period	Last date & time of submission of Bid	Date & Time of Opening of Technical Bid
1	Centralized Air Conditioning (HVAC) work of Administration Building at Central University of Rajasthan.	CURAJ/R/F.150/2023/1761 dated 25.08.2023	Rs. 2.28 Crore	Rs. 4.56 lakh	04 months	One Year from the date of record of commissioning/ completion certificate by Engineer-In-Charge	18.09.2023 till 02.00 PM	18.09.2023 at 03.00 PM

- The intending bidder must read the terms and conditions of **CPWD-6** carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required. Information and Instructions for bidders posted on website shall form part of bid document.
- The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from University website [www.curaj.ac.in](http://www.curaj.ac.in) and **CPP portal** free of cost.
- The contractor of CPWD, MES, BRO, State PWD or Public sector undertakings set up by the central or state government have to submit copy of **enlistment in appropriate class valid up to date**. They are also required to submit the **authorization letter from the manufacturer** whose product is quoted, which valid up to date.
- The bidder must ensure to quote rate of each item. Amount should be worked out for all items. Therefore, if any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as "0" (ZERO). However, If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section / sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
- Tenders with any condition including that of conditional rebates in the tender document shall be rejected forthwith.

6. The tenderer should also read the General Conditions of Contract for Construction works 2020 with latest amendments upto date of submission of bid (available on CPWD website), which is available as Govt. of India Publications, which will be a part of the agreement including the special conditions and particular specifications etc.
7. GST or any other tax applicable in respect of inputs procured by the contractor for this contract shall be payable by the Contractor and Government will not entertain any claim whatsoever in respect of the same. However, component of GST at time of supply of service (as provided in CGST Act 2017) provided by the contract shall be varied if different from that applicable on the last date of receipt of tender including extension if any.
8. Goods and service tax turn over tax, Excise duty, work contract tax or any other tax on materials as applicable shall be paid by the contractor himself. **The contractor shall quote his rates considering all such taxes.**
9. The tenderer(s) shall have to make his/her own arrangement for housing facilities for staff at his own cost. No labour huts will be allowed to be constructed in University campus. Any decision in this regard shall rest with the Central University of Rajasthan.
10. The work is required to be executed in occupied buildings. The tenderer(s) shall take precaution to ensure quality of workmanship as well as the progress of the work. He shall regulate the labour accordingly. The tenderer(s) shall make arrangements for disposal of dismantled materials and other trash properly in an environmental friendly manner.
11. **Earnest Money Deposit of Rs. 4.56 lakh** in the form of Demand Draft/FDR (drawn in favour of Central University of Rajasthan) of any Scheduled Bank payable at Bandarsindri/Kishangarh, District-Ajmer.
12. The tender should be submitted in two parts i.e. Technical Bid and Financial Bid. Both the bids shall be placed in two separate envelope with due mentioning of name of work and bid type. Both Sealed Envelopes should be kept in a main/ bigger envelope with due mention of Name of work date & time of opening of bids. This is to be submitted in the Tender Box, Dispatch Section Room No 101, Ground Floor, Administrative Building, Central University of Rajasthan within the period mentioned above. The University will not be responsible for any postal or other delay whatsoever. The offers submitted by Telegram/Fax/e-Mail shall not be considered. No correspondence will be entertained in this matter.
13. The department reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified contractors to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.
14. All needful statutory provisions to be adopted at site to tackle epidemic/ pandemic or similar situation of COVID-19 shall be done by the agency and expenditure on the same shall be borne by the contractor unless statutory orders direct for the reimbursement of the same.

## **LIST OF DOCUMENTS TO BE ATTACHED WITH THE TECHNICAL BID**

1. **Earnest Money Deposit of Rs. 4.56 lakh** in the form of Demand Draft/FDR (drawn in favour of Central University of Rajasthan) of any Scheduled Bank payable at Bandarsindri/Kishangarh, District-Ajmer.
2. Copy of Experience/work completion certificates from the clients regarding the quality and duration of services rendered during last seven years (Form C)
3. Copy of Enlistment Order of the Contractor in appropriate class in CPWD, MES, BRO, State PWD or Public sector undertakings set up by the central or state government having validity atleast till last date of bid submission.
4. Authorization letter from respective make original equipment manufacturer, which should be valid upto date.
5. Copy of GST Registration Certificate.
6. Photo copy of PAN Card.
7. Certificate of Financial Turnover from CA or Copy of audited balance sheets of last three financial years.(Form A)
8. Banker's Certificate or Net Worth Certificate (Form B/ B-1)
9. A self-certificate showing the track record of contracting firm/Contractor on the non-judicial stamp paper. (Annexure-III)
10. Undertaking for supply of genuine spare parts (Annexure –IV)
11. Letter of Transmittal (Annexure –I)

### **Note:**

- **Tenders received without EMD will not be accepted.**
- Each and every page of all the tender documents, annexures, corrigendum/addendum **(if any)** and their annexures should be duly seal & signed and submitted with technical bid.

Registrar  
Central University of Rajasthan



## SECTION – I (Brief Particulars of Work)

1. Salient details of the work for which bids are invited are as under:

Sl. No.	Name of Work	Estimated Cost	Period of Completion
01	Centralized Air Conditioning (HVAC) work of Administration Building at Central University of Rajasthan.	Rs. 2.28 Crore/-	04 Months

2. Work shall be executed according to General Conditions of Contract 2020 available separately at printer's outlets and online including amendments issued there in upto last date of bid. The General Conditions of Contract for Central Public Works Department is also available on website [www.cpwd.gov.in](http://www.cpwd.gov.in).
3. The scope of work includes Centralized Air Conditioning (HVAC) work of Administration Building at Central University of Rajasthan. The scope of work in this contract shall include all Civil, Electrical/HVAC works including services.
4. General features & major components of the scope of this work to be executed by the contractor are as under:
- i) **Electrical/HVAC Works :**
    - a) Complete Internal and External Electrical and Mechanical works in the buildings.
    - b) All E&M works including water supplies, external electric supplies, plumbing, insulation, piping, ducting, etc.
    - c) SITC of Air Cooled Chiller AHU Air Conditioning Plants as per BOQ
  - ii) **Civil Works :**
    - a) Scope of work also includes masonry work, plaster work, all external and internal finishing works, internal and external water supply, drainage, false ceiling work as per BOQ etc.
    - b) Any other work as detailed in BOQ, specified elsewhere in tender documents and even incidental works not defined in this document but essential for completion of work.
  - iii) The work shall be executed according to BOQ items, specifications and conditions specified in tender document, approved architectural, structural and service drawings and directions of Engineer-in-charge or his authorized representative.
  - iv) The above-mentioned scope of work of the contractor which is only indicative and not exhaustive. The contractor shall be responsible for executing all items required for completing the buildings and allied works in all respects to make it habitable and ready for occupation, as per direction of Engineer-in-charge.
  - v) The scope of work includes cost of all materials, manpower, equipment's, T&P, fixtures, accessories, royalties, taxes, watch & ward and all other essential elements for completion and maintenance of works whatsoever, under the scope of this contract. Any changes, modifications, revisions etc. required to be done by University, client, local bodies, design consultants etc. in accordance with applicable standards will have to be executed by the contractor as per provisions of the contract specified elsewhere in this bid document.

## **SECTION – II**

### **(INFORMATION & INSTRUCTIONS FOR BIDDERS)**

#### **1 General :**

##### **INFORMATION & INSTRUCTIONS FOR BIDDERS**

- 1.1 Letter of transmittal and forms for deciding eligibility are given in Annexure -I.  
All information called for in the enclosed forms should be furnished against the relevant columns in the forms. If for any reason, information is furnished on a separate sheet, this fact should be mentioned against the relevant column. Even if no information is to be provided in a column, a "nil" or "no such case" entry should be made in that column. If any particulars/query is not applicable in case of the bidder, it should be stated as "not applicable". The bidders are cautioned that not giving complete information called for in the application forms or not giving it in clear terms or making any change in the prescribed forms or deliberately suppressing the information may result in the bid being summarily disqualified. Bids made by telegram or e-mailed or telex and those received late will not be entertained.
- 1.2 References, information and certificates from the respective clients certifying suitability, technical knowledge or capability of the bidder should be signed by an officer not below the rank of Executive Engineer or equivalent.
- 1.3 The bidder may furnish any additional information which he thinks is necessary to establish his capabilities to successfully complete the envisaged work. He is, however, advised not to furnish superfluous information. No information shall be entertained after submission of eligibility criteria document unless it is called for by the Employer.

#### **2 Definitions:**

- 2.1 In this document the following words and expressions have the meaning hereby assigned to them.
- 2.2 Employer: Means the Central University of Rajasthan, acting through the Registrar, Central University of Rajasthan.
- 2.3 Bidder: Means the individual, proprietary firm, firm in partnership, limited company private or public or corporation
- 2.4 "Year" means "Financial Year" unless stated otherwise.

#### **3 Method of application:**

- 3.1 If the bidder is an individual, the application shall be signed by him above his full type written name and current address.
- 3.2 If the bidder is a proprietary firm, the application shall be signed by the proprietor above his full typewritten name and the full name of his firm with its current address.
- 3.3 If the bidder is a firm in partnership, the application shall be signed by all the partners of the firm above their full typewritten names and current addresses, or, alternatively, by a partner holding power of attorney for the firm. In the latter case a certified copy of the power of attorney should accompany the application. In both cases a certified copy of the partnership deed and current address of all the partners of the firm should accompany the application.  
If the bidder is a limited company or a corporation, the application shall be signed by a duly authorized person holding power of attorney for signing the application accompanied by a copy of the power of attorney. The bidder should also furnish a copy of the Memorandum of Articles of Association duly attested by a Public Notary.

#### **4 Final decision making authority**

The employer reserves the right to accept or reject any bid and to annul the process and reject all bids at any time, without assigning any reason or incurring any liability to the bidders.

#### **5 Particulars provisional**

The particulars of the work given in Section I are provisional. They are liable to change and must be

considered only as advance information to assist the bidder.

**6 Site visit**

The bidder is advised to visit the site of work, at his own cost, and examine it and its surroundings to himself collect all information that he considers necessary for proper assessment of the prospective assignment.

**7 Minimum Criteria for Technical Eligibility :**

7.1 The Contractors who fulfill the following requirements shall be eligible to apply. Joint ventures are not accepted. Should have satisfactorily completed the works as mentioned below during the last Seven years ending last day of the month previous to the one in which tenders are invited.

- Three similar works each costing not less than 40% of estimated cost put to tender or two similar works each costing not less than 60% of estimated cost put to tender or one similar work costing not less than 80% of estimated cost put to tender.
- Similar work shall mean works of **SITC of Chiller based Air Conditioning System**.
- 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 previous day of last day of submission of tenders. **(Documentary evidence to substantiate above fact must be submitted along with Form C of Annexure-II with technical bid).**

**To become eligible for issue of bid, the bidders shall have to furnish an affidavit as under:-**

*I/We undertake and confirm that eligible similar works(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for bidding in Department in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee. (Scanned copy to be uploaded at the time of submission of bid)*

7.2 The contractor of CPWD, MES, BRO, State PWD or Public sector undertakings set up by the central or state government have to submit **copy of enlistment in appropriate class** valid up to date. They are also required to submit the **authorization letter from the OEM** whose product is quoted, which valid up to date

7.2 Should have had **Average Annual Financial Turnover of Rs. 1.14 Crore** during the last three years ending 31st March 2023 (Scanned copy of Certificate from CA with Unique Document Identification Number (UDIN) to be attached). Year in which no turnover is shown would also be considered for working out the average.(Form A of Annexure-II)

7.3 The bidder should not have incurred any loss (profit after tax should be positive) in more than two years during available last five consecutive balance sheets, duly certified and audited by the Chartered Accountant. (The balance sheet in case of Pvt./ Public Ltd. company means its standalone financial statement and consolidated financial statement both).

7.4 The bidder should have a Banker's certificate from a Commercial Bank for amount equal to 40% of the Estimated Cost put to tender (ECPT) or the bidder should submit Net-worth Certificate of minimum 10% of ECPT issued by the certified Chartered Accountant (on the format prescribed in form B-1).

**8** The bidders have to submit a list of jobs in progress. Brief details of the units scope of work, names and address (postal mail) of present clients. (Form C-1 of Annexure-II)

- 9 The track record of the contracting manufacturer/dealer/firm/contractor should be clean and should not be blacklisted or not have any involvement in illegal activities or financial misappropriation / frauds etc. by any Central/State Government/Public Undertaking/Institute on any account. **A self-certificate on the Non-Judicial Stamp paper shall be attached.** (Annexure-III)
- 10 **Financial information**  
Bidder should furnish the Annual financial statement for the last five years in (Form"A"). Banker's Certificate in (Form "B") or Networth Certificate in (Form"B-1"). Please refer Annexure- II for forms.
- 11 **Experience of similar works**  
Bidder should furnish the List of eligible similar nature of works successfully completed during the last seven years in (Form "C") and ongoing works as well (Form C-1). Please refer Annexure- II for forms.
- 12 **Organization information**  
Bidder is required to submit the information in respect of his organization in Forms "E" Please refer APPENDIX- II for forms.
- 13 **Letter of transmittal**  
The bidder should submit the Letter of Transmittal attached with the document. Please refer Annexure-I for format of letter.
- 14 **Preparation & Submission of bids :**
- The tender should be submitted in two parts i.e. Technical Bid and Financial Bid. The Technical Bid and the Financial Bid should be sealed by the bidder in two separate covers super-scribed name of work and bid type.
  - Both Sealed Envelopes should be kept in a main/ bigger envelope super-scribed name of work, time and date of opening of bids.
  - The duly completed sealed envelope, superscripting the name of work will be received in the Tender Box, Rom-101 Dispatch Section, Administrative Building, Central University of Rajasthan, Bandarsindri, Kishangarh, District- Ajmer, (Raj) Pin-305817 only up to 02:00 pm on date mentioned in Notice Inviting Tender. The technical bid will be opened on the same day at 03:00 pm Bidder's representative may be present with their ID proof at the time of bid opening. Any tender received after the prescribed time may not be accepted/ considered for opening. The University will not be responsible for any postal or other delay whatsoever. The offers submitted by Telegram/Fax/e-Mail shall not be considered. No correspondence will be entertained in this matter.
- 15 **Financial bid** should contain only the Bidder's/Contractor's quoted rates in the given format (Annexure-XI) enclosed in **Envelope-II** with due mentioning name of work and bid type. Financial bid shall be opened only of those who have submitted proper EMD and have qualified in the Technical Bid as per eligibility criteria and on submission of all the required documents
- 16 **Opening of Price bid**  
After evaluation of technical bids, a list of short listed bidders will be prepared. Thereafter the financial bids of only the qualified and technically acceptable bidders shall be opened.

**17 Award Criteria**

- 17.1 The employer reserves the right, without being liable for any damages or obligation to inform the bidder, to:
  - (a) Amend the scope of work and value of contract.
  - (b) Reject any or all the applications without assigning any reason.
- 17.2 Any effort on the part of the bidder or his agent to exercise influence or to pressurize the employer would result in rejection of his bid. Canvassing of any kind is prohibited.

**CENTRAL UNIVERSITY OF RAJASTHAN**  
**NOTICE INVITING TENDER**

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The Registrar, Central University of Rajasthan, NH-8, Bandarsindri, Kishangarh-305817 invites sealed **Percentage Rate Tender** from approved and eligible contractors of CPWD and those of appropriate list of MES, BRO, BSNL, Railway and State PWD or Public sector undertakings set up by the central or state government for following work(s):

***Centralized Air Conditioning (HVAC) work of Administration Building at Central University of Rajasthan.***

The work **Estimated Cost: Rs. 2.28 Crore/-**. This estimate, however, is given merely as a rough guide.

The contractor of CPWD, MES, BRO, State PWD or Public sector undertakings set up by the central or state government having enlistment in appropriate class valid up to date and fulfilling the eligibility criteria of NIT are invited to apply.

1. Agreement shall be drawn with the successful bidders on prescribed Form No. CPWD-7/8 of GCC 2020 duly amended upto last date of submission of bid, which is available as a Govt. of India Publication and also available on website [www.cpwd.gov.in](http://www.cpwd.gov.in). Bidders shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
2. The time allowed for carrying out the work will be 03 Months from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the tender documents.
3. The site for the work is mostly available.
4. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms & conditions of contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen from website <https://etender.cpwd.gov.in>, from Estate Office of Central University of Rajasthan, free of cost.
5. After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of tender as notified. While submitting the revised bid, contractor can revise the quoted percentage rates but before last time and date of submission of tender as notified.
6. The bid submitted shall become invalid, if
  - (i) The bidder is found ineligible.
  - (ii) The bidder does not deposit original EMD with technical bid envelope.
  - (iii) If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above / below on the total amount of the tender or any section/ sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
  - (iv) If any discrepancy is noticed in the documents / details as submitted by bidder.
7. **Earnest Money Deposit:** The bidder shall be required to submit the Earnest Money Deposit (EMD) for an amount of Rs. **4.56 lakh** (Rupees Four Lakhs Fifty Six Thousand only) by way of demand draft/Fixed Deposit Receipt drawn in favour of **"Central University of Rajasthan"**. The EMD must be enclosed in the envelope containing the technical bid. Bid(s) received without EMD will be rejected.

8. **Performance Guarantee :**

The contractor whose bid is accepted will be required to furnish performance guarantee of **5% (Five Percent) of the tender accepted amount** within the period specified in Schedule F. This guarantee shall be in the form of cash (in case guarantee amount is less than Rs. 10000/-) or Deposit at Call receipt of any scheduled bank/Banker's cheque of any scheduled bank/Demand Draft of any scheduled bank/ Pay order of any Scheduled Bank of any scheduled bank (in case guarantee amount is less than Rs. 1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F', including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The earnest money deposited along with bid shall be returned after receiving the aforesaid performance guarantee. The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/ registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board including Provident Fund Code No, if applicable and also ensure the compliance of aforesaid provisions by the sub contractors, if any, engaged by the contractor for the said work within the period specified in Schedule F.

9. **Security Deposit :**

- The contractor whose tender is accepted will also be required to furnish by way of Security Deposit for the fulfillment of his contract, an amount equal to **2.5% of billed amount plus 50% of PG of tender accepted amount the work**. The Security deposit will be collected by deductions from the running bills as well as final bill of the contractor at the rates mentioned above. The Security amount will also be accepted in cash or in the shape of Government Securities. Fixed Deposit Receipt of a Scheduled Bank or will also be accepted for this purpose provided confirmatory advice is enclosed.
- The said security deposit shall be returned after satisfactorily completion of defect liability period.
- This security deposit shall be forfeited if he/they fails to comply with any of the conditions of the contract. No interest shall be paid on the security deposit.

10. **Payment Clause:**

- A) Running Account bill payment will be made as per execution of work duly certified by the Engineer-In-Charge or authorized representative of the University.
- B) No advance payment will be made. Income tax and all other statutory tax deduction will be made as per Govt. of India norms.  
**GST:** The amount of GST (if any) charged by the Contractor from the University on account of the services rendered by him, will be paid only after submission of copy of challan of GST with necessary supporting documents.

11. **The description of the work is as follows :-** *Centralized Air Conditioning (HVAC) work of Administration Building at Central University of Rajasthan.* Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which

stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

Equipment data shall be submitted as per format attached. Tenderers not submitting data in full will do so at the risk of the tenders being evaluated with such information as may be available with the client.

Mere becoming the lowest bidder, prior to financial bid scrutiny will not give any right to the lowest bidder to claim that he is successful in the bidding process. The successful bidder (L1) shall be decided only after following due procedure.

The Bidder meeting the minimum eligibility criteria and with the overall lowest bid price shall be deemed as the successful Bidder and shall be considered eligible L-1 Bidder for further processing.

12. The competent authority on behalf of the Central University of Rajasthan does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the tenders received without the assignment of any reason. All bidders in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.
13. Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable to rejection.
14. The competent authority on behalf of President of India reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.
15. No Engineer of Gazetted rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his/her retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the contractor's service.
16. The tender for the works shall remain open for acceptance for a period of **Ninety Days (90) days** from the date of opening of tenders. If any bidder withdraws his tender before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the department, then the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further, the bidder shall not be allowed to participate in the re-tendering process of the work.
17. Except writing rates and amount, the bidder should not write any conditions or make any changes, additions, alterations and modifications in the printed/downloaded form of tenders. If any changes, additions, alterations, modifications are detected in the submitted bid even at a later date when contract has been awarded, the contract will be liable to be void. The decision of Registrar, Central University of Rajasthan will be final & binding to the Contractor in this regard.
18. The University does not bind itself to accept the lowest or any other tender and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidder shall be summarily rejected.
19. The Specifications to be followed for execution of work: CPWD General specifications for electrical works Part-I (Internal) 2013, HVAC-2017 and DSR Civil Vol-I &II (2019) as modified and Correction Slips/amendments issued upto previous day to last date of bid submission or any other relevant CPWD manual/guideline or IS.



## **20. Signing of Contract**

The successful tenderer/contractor, on acceptance of his tender by the Accepting Authority, shall, within 15 days from the stipulated date of start of the work, sign the contract consisting of

- (i) the notice inviting tender, all the documents including drawings, if any, forming the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto.
- (ii) Standard C.P.W.D. Form as mentioned in Schedule 'F' consisting of:
  - (a) Various standard clauses with corrections up to the date stipulated in Schedule 'F' along with annexures thereto.
  - (b) C.P.W.D. Safety Code.
  - (c) Model Rules for the protection of health, sanitary arrangements for workers employed by CPWD or its contractors.
  - (d) CPWD Contractor's Labour Regulations.
  - (e) List of Acts and omissions for which fines can be imposed.
  - (f) Integrity Pact
- (iii) No payment for the work done will be made unless contract is signed by the contractor.

## **21. The bid document will include following two components:-**

Part A: CPWD-6, CPWD-7 including schedule A to F for the both the components of the work, Standard General Conditions of Contract for CPWD 2020 as amended/ modified up to last date of submission of bid.

Part B: General/specific conditions, specifications and schedule of quantities applicable to the work. In case of any discrepancy between part A and part B of the contract agreement, the provision of Part A shall prevail.

## **22. Entire work under the scope of composite bid including major and all minor components shall be executed under one agreement.**

## **23. Any dispute unless resolved amicable shall be settled by a court of law having jurisdiction over Jaipur/Ajmer.**

**CPWD – 7**  
**(Percentage Rate Tender)**

**Central University of Rajasthan**  
STATE        RAJASTHAN

BRANCH     ESTATE

**Percentage Rate Tender & Contract for Works**

**Tender for the work of:** *Centralized Air Conditioning (HVAC) work of Administration Building at Central University of Rajasthan.*

- (i) Tender to be submitted by 02.00 PM on 18.09.2023 at Room 101, Admin Building, Central University of Rajasthan.
- (ii) To be opened in presence of tenderers/contractors who may be present at 03.00PM on 18.09.2023 by the authorized representative of Central University of Rajasthan.

Issued to: -        M/s \_\_\_\_\_

Signature of officer issuing the documents

Designation:

Date of Issue:

**TENDER**

I/We have read and examined the notice inviting tender, schedule, A, B, C, D, E & F. specifications applicable , Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, special conditions, Schedule of Rate & other documents and Rules referred to in the condition of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for the University within the time specified in Schedule "F", viz., schedule of quantities and in accordance with the specifications, designs, drawings and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of contract and with such materials as are provided for, by, and in respects in accordance with, such condition so far as applicable.

I/We agree to keep the tender open for **ninety (90) days** from the due date of opening and not to make any modification in its terms and conditions.

A sum of Rs. **4.56 lakh** is hereby forwarded in demand draft in favour of Registrar, Central University of Rajasthan as earnest money. If I/We fail to furnish the prescribed performance guarantee of tender form within prescribed period. I/We agree that the University, 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 University 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 and to carry out such deviations as may be ordered, up to maximum of the percentage mentioned in schedule 'F' and those in excess of that limit at the rates to be determined in accordance with the provision contained in clause 12.2 and 12.3 of the tender form.

Further I/We agree that in case of forfeiture of earnest money or both earnest money and performance guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/We shall be

debarred for tendering in Central University of Rajasthan in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-In-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

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.

Dated \_\_\_\_\_

Signature of Tenderer/Contractors

Postal Address\* \_\_\_\_\_

Telephone No.\* \_\_\_\_\_

Fax \_\_\_\_\_

E-Mail \_\_\_\_\_

Witness\*\*: \_\_\_\_\_

Address\*\*: \_\_\_\_\_

Occupation\*\*: \_\_\_\_\_

(\*) To be filled in by the Tenderer/Contractors.

(\*\*) To be filled in by the Witness.

## ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me on behalf of Central University of Rajasthan for a sum of Rs. \_\_\_\_\_).

The letter referred to below shall form part of this agreement:-

a)

b)

c)

Signature.....

Dated .....

Registrar ,  
Central University of Rajasthan.

## FORM OF AGREEMENT

(To be executed on non-judicial stamp paper of Rs.500/-)

Agreement No: \_\_\_\_\_

Dated: \_\_\_\_\_

### CONTRACT FOR CENTRALIZED AIR CONDITIONING (HVAC) WORK OF ADMINISTRATION BUILDING AT CENTRAL UNIVERSITY OF RAJASTHAN.

THIS AGREEMENT is made on \_\_\_\_\_ day of \_\_\_\_\_ (month), \_\_\_\_\_(year) between **Central University of Rajasthan, NH-8 Bandarsindri, Tehsil-Kishangarh, District- Ajmer , Rajasthan, Pin- 305817**, hereinafter called University, (which expression shall, wherever the context so demands or requires, includes their successors in office and assigns) on the one part and ..... hereinafter called the Contractor (which expression shall wherever the context so demands or requires, include his/their successors and assigns) on the other part.

WHEREAS the University is desirous that certain works should be executed viz. .... and has by Letter of acceptance/award .....dated .....accepted the quotation/offer submitted by the contractor for the execution, maintenance and completion of such works at a total contract price of Rs..... (Rupees ..... only).

Now THIS AGREEMENT WITNESSETH as follows:

1. In this agreement, words and expressions shall have the same meaning as are respectively assigned to them in the conditions of contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of the agreement viz:
  - a) This Form of Agreement
  - b) The Letter of Award dated \_\_\_\_\_
  - c) NIT document
  - d) Priced Schedule/ Schedule of Quantities.
  - e) Scope of work and conditions of contract.
  - f) All Annexures to NIT
  - g) CPWD GCC with up-to-date correction slips.

The aforesaid documents shall be taken as complementary and mutually explanatory of one another, but in the case of ambiguities or discrepancies, shall take precedence in the order set out above.

3. In consideration of the payment to be made by the University to the contractor as hereinafter mentioned, the contractor hereby covenants with the University to execute, complete and maintain the works in conformity in all respects within the provisions of the contract.
4. The University thereby covenants to pay to the contractor in consideration of the execution, completion and maintenance of the works at contract price at the time and in the manner prescribed by the contract.

In WITNESS whereof the parties hereto have caused their respective common seals to be here into affixed (or have herewith set their respective hands and seals) the day and year first above written.

Signed, Sealed And Delivered By

*For and on behalf of*

By:

Name

Designation

In the presence of

WITNESS

1.

2.

Signed, Sealed And Delivered By

*For and on behalf of*

Central University of Rajasthan  
Bandarsindri, Kishangarh  
Ajmer, Rajasthan

By:

In the presence of

WITNESS

1.

2.

## **PROFORMA OF SCHEDULES A to F**

### **SCHEDULE 'A'**

Schedule of quantities (Enclosed)

As per Schedule of Work, Page 68-82

### **SCHEDULE 'B'**

Schedule of materials to be issued to the tenderer/contractor.

Sl. No.	Description of Item	Quantity	Rates in figures & words at which the material will be charged to the contractor	Place of Issue
1	2	3	4	5
1.	NIL	NIL	NIL	NIL

### **SCHEDULE 'C'**

Tools and plants to be hired to the tenderer/contractor

Sl. No.	Description	Hire charges per day	Place of issue
1	2	3	4
	NIL	NIL	NIL

### **SCHEDULE 'D'**

Extra schedule for specific requirements/ documents for the work, if any.

*Nil*

### **SCHEDULE 'E'**

1. Reference to General Conditions of contract: General Conditions of contract for Central PWD Works: GCC 2020, SOP for Works Manual, Form-7 for CPWD works as amended upto last date of submission of bid.
2. **Name of work:-** Centralized Air Conditioning (HVAC) work of Administration Building at Central University of Rajasthan.
  - (i) **The work is estimated to the cost** : Rs. 2.28 Crore/-
  - (ii) **Earnest Money** : Rs. 4.56 lakh  
(to be returned after receiving performance guarantee without interest)
  - (iii) **Performance guarantee** : 5% of tender accepted value.  
(to be returned after completion of work without interest)
  - (iv) **Security Deposit accepted amount the work** : 2.5% of billed amount plus 50% of PG of tender  
(to be returned without interest after completion of defect liability period)

### **SCHEDULE 'F'**

General Rules & Directions  
Officer Inviting Tender

Registrar  
Central University of Rajasthan, Bandarsindri,  
NH-8.

Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined

See Below under clause 12

in accordance with Clauses 12.2 & 12.3

**Definitions:**

**2(v) Engineer-in-Charge** Executive Engineer, Central University of Rajasthan, Bandarsindri, NH-8.

**2(vii) Accepting Authority** Registrar, Central University of Rajasthan, Bandarsindri, NH-8.

2(x) Percentage on cost of materials and labor to cover all overhead & profits 15%

2(xi) Standard Schedule of Rates DSR 2022 (E&M), DSR Civil 2021, DSR VRV 2019 and Market Rates.

2(xii) Department Central University of Rajasthan

9(ii) Standard CPWD contract Form GCC 2020, CPWD Form 7/ 8 as modified & corrected upto GCC 2020 or latest, CPWD Form 8 as modified and Correction Slips/amendments issued upto previous day to last date of bid submission.

**Clause 1 (Performance Guarantee)**

- i) Time allowed for submission of Performance guarantee, Programme Chart (Time and Progress) and applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board including Provident Fund Code No. or proof of applying thereof from date of issue of letter of acceptance. **14 days**
- ii) Maximum allowable extension with late fee @ 0.1% per day of performance guarantee amount beyond the period provided in (i) above **07 days**

**Clause 2 (Compensation for Delay)**

Authority for fixing compensation under clause 2.

**Registrar, Central University of Rajasthan.**

**Clause 5**

Number of days from the date of issue of letter of acceptance for reckoning date of start Mile stone(s) as per table given below:- **14 days**

**Clause 5.2 (Hindrance Register)**

**Applicable**

**Milestone(s) as per table given below**

S.No.	Description of Milestone (Physical)	Time Allowed in Days (from date of start)	Amount to be withheld in case of non-achievement of mile stone.
1	Submitting of samples of material/drawings (if any) for approval	15 Days	0.25% of accepted Tender amount
2	Placing of order for 100% material.	25 Days	0.25% of accepted Tender amount
3	Supply of 30% material	40 Days	0.50% of accepted Tender amount

4	Installation of 30% material received and Supply of 50% material	45 Days	1.0% of accepted Tender amount
5	Installation of 50% of the material	60 Days	1.0% of accepted Tender amount
6	Supply and Installation of 80% material	90 Days	1.0 % of accepted Tender amount
7	Installation of 100% material	105 Days	0.50% of accepted Tender amount
8	Testing and commissioning of all installation 100%	120 Days	1.0 % of accepted Tender amount

**Time allowed for execution of work**

**Four (04) Months**

**Authority to decide:**

(i) Extension of time

**Registrar, Central University of Rajasthan**

(ii) Rescheduling of milestones

**Registrar, Central University of Rajasthan**

(iii) Shifting of date of start in case of delay in handing over of site

**Registrar, Central University of Rajasthan**

**Clause 6 :**

**Computerized Measurement Book Applicable**

**Clause 7 :** Gross work to be done together with net payment/ adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment

**As per decision of Engineer-In-Charge**

**Clause 7A :**

No Running Account Bill shall be paid for the work till the applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board, whatever applicable are submitted by the contractor to the Engineer-in-Charge.

**Applicable**

**Clause 8A**

**Not Applicable**

**Clause 10A**

List of testing equipment to be provided by the contractor at site lab

**As per site requirement**

**Clause 10 B (ii)**

**Not Applicable**

**Clause 10 C**

Component of labour expressed as percent of value of work:

**NA**

**Clause 10 CA**

Payment due to variation in prices of materials after receipt of tender

**NA**

**Clause 10 CC**

Payment due to Increase / Decrease in Prices/ Wages (excluding materials covered under clause 10 CA) after Receipt of Tender for Works

**NA**



**Clause 11**

Specifications to be followed for execution of work

**CPWD General specifications for electrical works Part-I (Internal) 2013, HVAC-2017 and DSR Civil Vol-I &II (2019), other relevant CPWD Manual/guidelines or IS norms as modified and Correction Slips/amendments issued upto previous day to last date of bid submission.**

**Clause 12**

Authority to decide deviation upto 1.5 times of tendered amount

**Registrar, Central University of Rajasthan**

12.2 & 12.3: Deviation limit beyond which clauses 12.2 & 12.3 shall apply for building/electrical work.

**100%**

12.5 :

(i) Deviation limit beyond which clauses 12.2 & 12.3 shall apply for foundation work (except work).

**NA**

(ii) Deviation Limit for items in earth work subhead of DSR or related items

**NA**

**Clause 16**

Competent Authority for deciding reduced rates

**Registrar, Central University of Rajasthan**

**Clause 18**

List of mandatory machinery, tools & plants to be deployed by the contractor at site

As applicable to be arranged by the contractor

**Clause 19**

Authority to decide penalty for each default

**Registrar, Central University of Rajasthan**

**Clause 25**

Constitution of Dispute Redressal Committee (DRC)  
DRC shall constitute one Chairman and two members

Competent Authority to appoint DRC  
Honorable Vice Chancellor  
Central University of Rajasthan

**Clause 32****Requirement of Technical Representative(s) and recovery Rate**

S.No	Min Qualification of Technical Representative	Discipline	Designation	Minimum Experience	Number	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 36(i)	
						Figures	Words
01	Graduate Engineer or Diploma Engineer	(Electrical)	Graduate Engineer or Diploma Engineer	01	02 Yrs. OR 05Yrs.	15000/-	(Rs. Fifteen Thousand)

Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers. Diploma holder with minimum 10 year relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.

**Clause 38**

- (i) (a) Schedule/statement for determining theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates
- (ii) Variations permissible on theoretical quantities:
  - (a) Cement
    - For works with estimated cost put to tender not more than Rs. 25 lakh. 3% plus/minus
    - For works with estimated cost put to tender more than Rs. 25 lakh. 2% plus/minus
  - (b) Bitumen All Works 2.5% plus & only & nil on minus side
  - (c) Steel Reinforcement and structural steel sections for each diameter, section and category 2% plus/minus
  - (d) All other materials Nil

## ITEMS WHICH ARE TO BE EXECUTED THROUGH SPECIALIZED AGENCY (ELECTRICAL COMPONENT)

**Note:**

- 1) 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 last date of submission of tender. For other conditions, refer special conditions specified in Part C.
- 2) The applicant shall either himself meet the eligibility conditions for the respective E&M packages or otherwise, he will have to associate an agency meeting the eligibility requirements as given in this tender document and submit the details as required for association within 15 days of award of work OR before start of minor component of work whichever is earlier.

The contractor must associate specialized agencies meeting eligibility criteria as detailed below for specialized nature of items / work listed below: -

S. No.	Specialized Work(s) / Component of work(s)	Estimated Cost (in Rs.)	Eligibility Criteria for specialized agency to be associated by contractor for the work
A	<b>Electrical Work –</b> LT Panel, Cabling, EI & Fittings etc	16,98,934/-	<p>The main contractor shall have to associate with agency fulfilling the following eligibility criteria having successfully completed during last seven years ending up to previous day of last date of submission of tender as given below with completion certificate issued by an officer not below the rank of Executive Engineer or equivalent duly attested.</p> <p>Three similar completed works each of value not less than 40% of estimated value of component or Two similar completed works each of value not less than Rs. 60% of estimated value of component or One similar completed work of value not less than 80% of estimated value of component.</p> <p>Similar work shall mean "SITC of Electrical LT work". <b><i>Note: The Associated Electrical Contractor should have valid Electrical Contractor License of appropriate class.</i></b></p> <p>However, the Composite category contractor shall also be eligible to carry out himself without associating any specialized agency provided: (a) He fulfills the prescribed eligibility criteria respectively for this work &amp; possess valid electrical contractor license of appropriate class Or (b) He directly procures the equipment of approved make from manufacturer and gets it installed from authorized agency/service provider of the manufacturer Or specialized agency as per criteria mentioned as above.</p>

B	<b>Civil Work</b> – False Ceiling etc	17,23,246/-	<p>The main contractor shall have to associate with agency fulfilling the following eligibility criteria having successfully completed during last seven years ending up to previous day of last date of submission of tender as given below with completion certificate issued by an officer not below the rank of Executive Engineer or equivalent duly attested.</p> <p>Three similar completed works each of value not less than 40% of estimated value of component or Two similar completed works each of value not less than Rs. 60% of estimated value of component or One similar completed work of value not less than 80% of estimated value of component.</p> <p>Similar work shall mean "False Ceiling related works".</p> <p>However, the Composite category contractor shall also be eligible to carry out himself without associating any specialized agency provided: (a) He fulfills the prescribed eligibility criteria respectively for this work Or (b) He directly procures the equipment of approved make from manufacturer and gets it installed from authorized agency/service provider of the manufacturer Or specialized agency as per criteria mentioned as above.</p>
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1. The Composite Contractor and the associated specialized agency is give required affidavit to confirm their association. The main contractor will submit MOU signed with eligible and approved specialized agency. The MOU in the specified format shall be signed by both the parties' i.e. main contractor as 1st party and associated specialized agency as 2nd party.
2. The proposed specialized agency should submit a copy of an affidavit on non-judicial stamp paper of Rs. 100/- as under, the same shall be counter signed by main contractor.  
***"I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of CURAJ, then I/We shall be debarred for working in CURAJ contracts in future forever. It is also certified that the specialized agency \_\_\_\_\_ is not blacklisted from any Government organization"***
3. In addition to the eligibility criteria as mentioned above table, of the proposed associated agency, copy of his/their registration in GST, Valid electrical contractor license (if applicable) duly attested by the Main Contractor shall be submitted to the University.
4. In the event of the concerned associated agency is not performing satisfactorily or failure of associate/ sub-contractor to complete the work, the main contractor on the direction of the department in writing, shall remove the Associate/subcontractor deployed on the work and shall submit name of new associate subcontractor who fulfill the conditions mentioned in NIT to execute the leftover work without any loss of time. Such associates shall also enter into tripartite Agreement/Contract along with the main contractor and the University and shall meet all the guarantee for the equipment's already supplied for which payment has been released by the CURAJ in part. If any equipment supplied for the work, during the currency of the earlier Associate/sub-contractor and paid partly by the CURAJ, becomes redundant /not in a position to be installed and commissioned and put to beneficial use due to change in agency for execution of E&M work, the main contractor shall be liable for replacement of the equipment(s) at no cost to the University.

5. No change of associated agency will be allowed without prior approval of the University. Tender accepting authority reserves the right/approves to the change of Sub-Agency in case it is required during the currency of the contract.
6. The main contractor shall be responsible and liable for proper and complete execution of the Electrical work and ensure coordination and completion of both electrical and related civil work.
7. The University shall not be liable to payment of the associated specialized agency in whatsoever case and it will be the responsibility of Main Contractor only. The University shall not entertain any dispute regarding the same between Main Contractor & associated specialized agency.
8. The associate or sub-contractor shall sign a tripartite Agreement/MOU along with the main tenderer and the University, for technical compliance of specification, guarantee, execution of work as per scope of work mentioned in NIT and conditions of contract etc.

## **SPECIMEN FORMAT FOR MOU MEMORANDUM OF UNDERSTANDING [M.O.U] BETWEEN**

- 1] M/S [Name of the firm with full address]  
Enlistment Status (as per the tender document)  
[Henceforth called the main contractor]

And

- 2] M/S [Name of the firm with full address]  
[Henceforth, called Associated Electrical Contractor/Specialized Agency]

**For the execution of Work Centralized Air Conditioning (HVAC) work of Administration Building at Central University of Rajasthan.**

We state that M.O.U between us will be treated as an agreement and has legality as per Indian Contract Act [amended up to date] and the department [CURAJ] can enforce all the terms and conditions of the agreement for execution of the above work. Both of us have read the terms & conditions, scope of work involved in [Name of Work involved] and fully agree to provide the service as per NIT. Both of us shall be responsible for the execution of work as per the agreement to the extent this MOU allows. Both the parties shall be paid consequent to the execution as per agreement to the extent this MOU permits. In case of any dispute, either of us will go for mediation/arbitration by the Competent Authority of the University. Any of us may appeal against the mediation/arbitration to the Competent Authority of the University. His decision shall be final and binding on both of us.

We have agreed as under:

- 1] The Associated electrical contractor/specialized agency will execute the specializes works as per terms and conditions of the agreement.
- 2] That the Associated electrical contractor/specialized agency has gone through the contract and has understood the scope of work required for the purpose of executing the specialize work.
- 3] That the Associated electrical contractor/specialized agency has given its consent to carry out the said work in accordance with the specification and the time schedule prescribed in the above mentioned contract.

SIGNATURE OF MAIN CONTRACTOR

SIGNATURE OF ASSOCIATED OEM/  
OEM Authorized Service Center

Name of Authorized Signatory:

Name of Authorized Signatory:

Date:

Date:

Place:

Place:

COUNTERSIGNED:  
REGISTRAR, CURAJ

## **WILLINGNESS CERTIFICATE**

**Name of work: Centralized Air Conditioning (HVAC) work of Administration Building at Central University of Rajasthan**

I hereby give my willingness to work as Associate Specialized Agency for electrical component of the above mentioned work.

I will execute the work as per specifications and conditions for the agreement and as per direction of the Engineer-In-Charge. Also, I will engage full time technically qualified supervisor/engineer for the works. I will attend inspection of officers of the department as and when required.

Dated:

Signature of the Associate Specialized Agency

## INTEGRITY PACT

To,  
Registrar  
Central University of Rajasthan

Sub: Submission of Tender for the work of \_\_\_\_\_.

Dear Sir,

I/We acknowledge that CPWD is committed to follow the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid document.

I/We agree that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that I/We will sign the enclosed integrity Agreement, which is an integral part of tender documents, failing which I/We will stand disqualified from the tendering process.

I/We acknowledge that THE MAKING OF THE BID SHALL BE REGARDED AS AN UNCONDITIONAL AND ABSOLUTE ACCEPTANCE of this condition of the NIT.

I/We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by CPWD. I/We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article 1 of the enclosed Integrity Agreement.

I/We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/bid, CPWD shall have unqualified, absolute and unfettered right to disqualify the tenderer/bidder and reject the tender/bid in accordance with terms and conditions of the tender/ bid.

Yours faithfully

(Duly authorized signatory of the Bidder)



**To be signed by the tenderer and same signatory competent / authorised to sign the relevant contract on behalf of Central University of Rajasthan**

**INTEGRITY PACT**

This Integrity Agreement is made at ..... on this .....day of .....20.....

**BETWEEN**

Central University of Rajasthan through Registrar, Central University of Rajasthan, Bandersindri, Dist-Ajmer. (Hereinafter referred to as the 'Principal/Owner', which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

**AND**

.....

(Name and Address of the Individual/firm/Company)

Through .....

(Details of duly authorized signatory)

Hereinafter referred to as the "Tenderer/Contractor" and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

**Preamble**

WHEREAS the Principal / Owner has floated the Tender (NIT No. ....) (hereinafter referred to as "Tender/Bid") and intends toward, under laid down organizational procedure, contract for - .....

Here in after referred to the "Contract".

AND WHEREAS the Principal/Owner values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relation with its Tenderer(s) and Contractor(s).

AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as "Integrity Pact" or "Pact"), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this Pact witnesses as under:

**Article 1: Commitment of the Principal/Owner**

- 1) The Principal/Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:
  - (a) No employee of the Principal/Owner, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
  - (b) The Principal/Owner will, during the Tender process, treat all Tenderer(s) with equity and reason. The Principal/Owner will, in particular, before and during the Tender process, provide to all Tenderer(s) the same information and will not provide to any Tenderer(s) confidential/ additional information through which the Tenderer(s) could obtain an advantage in relation to the tender process or the contract execution.
  - (c) The Principal/Owner shall endeavour to exclude from the Tender process any person, whose conduct in the past has been of biased nature.
- 2) If the Principal/Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code(IPC)/Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal/Owner will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

## **Article 2: Commitment of the Tenderer(s)/Contractor(s)**

- 1) It is required that each Tenderer/Contractor (including their respective officers, employees and agents) adhere to the highest ethical standards, and report to the Government / Department all suspected acts of fraud or corruption or Coercion or Collusion of which it has knowledge or becomes aware, during the tendering process and throughout the Negotiation or award of a contract.
- 2) The Tenderer(s)/Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process and during the Contract execution:
  - a) The Tenderer(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal/Owner's employees involved in the Tender process or execution of the Contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the Tender process or during the execution of the Contract.
  - b) The Tenderer(s)/Contractor(s) will not enter with other Tenderer(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or on-submission of bids or any other actions to restrict competitiveness or to cartelize in the bidding process.
  - c) The Tenderer(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act. Further the Tenderer(s)/Contractor(s) will not use improperly, (for the purpose of competition or personal gain), or pass on to others, any information or documents provided by the Principal/Owner as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
  - d) The Tenderer(s)/Contractor(s) of foreign origin shall disclose the names and addresses of agents/representatives in India, if any. Similarly Tenderer(s)/Contractor(s) of Indian Nationality shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participate in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.
  - e) The Tenderer(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.
- 3) The Tenderer(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- 4) The Tenderer(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice means a wilful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Government interests.
- 5) The Tenderer(s)/Contractor(s) will not, directly or through any other person or firm use Coercive Practices (means the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/ her reputation or property to influence their participation in the tendering process).

## **Article 3: Consequences of Breach**

Without prejudice to any rights that may be available to the Principal/Owner under law or the Contract or its established policies and laid down procedures, the Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Tenderer(s)/Contractor(s) and the Tenderer/ Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right:

- 1) If the Tenderer(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal/Owner after giving 14 days' notice to the Contractor shall have powers to disqualify the Tenderer(s)/Contractor(s) from the Tender process or terminate/determine the

Contract, if already executed or exclude the Tenderer/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/Owner. Such exclusion may be forever or for a limited period as decided by the Principal/Owner.

- 2) Forfeiture of EMD/Performance Guarantee/Security Deposit: If the Principal/Owner has disqualified the Tenderer(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accrued the right to terminate/determine the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal rights that may have accrued to the Principal/Owner, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Guarantee and Security Deposit of the Tenderer/Contractor.
- 3) Criminal Liability: If the Principal/Owner obtains knowledge of conduct of a Tenderer or Contractor, or of an employee or a representative or an associate of a Tenderer or Contractor which constitutes corruption within the meaning of IPC Act, or if the Principal/Owner has substantive suspicion in this regard, the Principal/Owner will inform the same to law enforcing agencies for further investigation.

#### **Article 4: Previous Transgression**

- 1) The Tenderer declares that no previous transgressions occurred in the last 5 years with any other Company in any country confirming to the anticorruption approach or with Central Government or State Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the Tender process.
- 2) If the Tenderer makes incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Tenderer/Contractors deemed fit by the Principal/ Owner.
- 3) If the Tenderer/Contractor can prove that he has resorted / recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its own discretion, revoke the exclusion prematurely.

#### **Article 5: Equal Treatment of all Tenderers/Contractors/SubContractors**

- 1) The Tenderer(s)/Contractor(s) undertake(s) to demand from all subContractors a commitment in conformity with this Integrity Pact. The Tenderer/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/Pact by any of its Sub-Contractors/sub-vendors.
- 2) The Principal/Owner will enter into Pacts on identical terms as this one with all Tenderers and Contractors.
- 3) The Principal/Owner will disqualify Tenderers, who do not submit, the duly signed Pact between the Principal/Owner and the tenderer, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

#### **Article 6- Duration of the Pact**

This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor 12 months after the completion of work under the contract or till the continuation of defect liability period, whichever is more and for all other tenderers, till the Contract has been awarded.

If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this Pacts as specified above, unless it is discharged/determined by the Competent Authority, CPWD.

#### **Article 7- Other Provisions**

- 1) This Pact is subject to Indian Law, place of performance and jurisdiction is the Headquarters of the Division of the Principal/Owner, who has floated the Tender.
- 2) Changes and supplements need to be made in writing. Side agreements have not been made.
- 3) If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium members. In case of a Company, the Pact must be signed by a representative duly authorized by board resolution.
- 4) Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

- 5) It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action taken by the Owner/Principal in accordance with this Integrity Agreement/ Pact or interpretation thereof shall not be subject to arbitration.

**Article 8- LEGAL AND PRIOR RIGHTS**

All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Integrity Pact will have precedence over the Tender/Contact documents with regard any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of following witnesses:

.....  
(For and on behalf of Principal/Owner)

.....  
(For and on behalf of Tenderer/Contractor)

WITNESSES:

1. ....  
(signature, name and address)

2. ....  
(signature, name and address)

Place:

Dated :

# **PART –B**

## **GENERAL TERMS & CONDITIONS**

### **General**

This specification covers manufacture, testing as may be necessary before dispatch, delivery at site, all preparatory work, assembly and installation, final testing, commissioning, for the following work:-

**Name of Work:** Centralized Air Conditioning (HVAC) work of Administration Building at Central University of Rajasthan.

The tenderer is advised to visit the site of the work i.e. “Administration Building of Central University of Rajasthan, Bandarsindri, Kishangarh, Distt. – Ajmer, Rajasthan.” to have an idea of the execution of the work; failure to do so shall not absolve their responsibility to do the work as specified in agreement.

1. The work shall be executed as per CPWD’s general specification for Electrical Works Part-I Internal 2013 & HVAC-2017, IE rules, Indian Standards, as per Rules of NBC 2005 & all the amendment issued upto date and as per directions of Engineer-in-Charge. These additional specifications are to be read in conjunction with above and in case of variations; specifications given in this Additional conditions shall apply. However, nothing extra shall be paid on account of these additional specifications & conditions as the same are to be read along with schedule of quantities for the work.

2. **Mobilization Advance:**

No mobilization advance shall be paid for the work, unless otherwise stipulated in tender papers for any individual works/ composite work.

3. **Rates:**

3.1 The work shall be treated as on works contract basis and the rates tendered shall be for complete items of work (except the materials, if any, stipulated for supply by the department) inclusive of all taxes, duties, and levies etc. and all charges for items contingent to the work, such as packing, forwarding, insurance, freight and delivery at site for the materials to be supplied by the contractor, watch and ward of all materials (including those supplied by the department, if any) for the work at site etc

3.2 Prices quoted shall be firm.

4. **Taxes and Duties:**

4.1 Being an indivisible works contract, GST etc. are not payable separately.

4.2 The GST shall be deducted from the bills of the contractor as applicable in the State in which the work is carried out, at the time of payments.

5. **Payment Terms:**

5.1 The following percentage of contract rates shall be payable against the stages of work shown herein:

S.No.	Stage of work	Machinery & Equipment Cost	All other Item cost
I	After initial inspection (wherever specified) & delivery at site in good condition on pro-rata basis	80%	70%
II	On completion of pro-rata installation	10%	20%
III	On commissioning and completion of successful running in period	5%	5%
IV	On completion of major seasonal test	5%	5%

5.2 When the major seasonal test cannot be carried out on commissioning of the installation due to any reason not attributable to the contractor, the installation will be handed over to the Department for beneficial use after completion of successful running in test of 7 days subject to a minimum aggregate of 120 hours as per para 1.15 above. The balance payment shall be released to the contractor on his

furnishing a bank guarantee in the specified format from a scheduled bank for an equivalent amount. The bank guarantee shall be valid for a period of 6 months. However it will be extended till the successful completion of the major seasonal test. This bank guarantee shall be independent of the one furnished for performance guarantee.

5.3 The following shall be considered major seasonal test for the purpose of the above payment terms: -

- a) Air-conditioning system: Summer or monsoon
- b) Central heating system : Winter
- c) ETAC : Summer
- d) Cold room/ Walk in cooler : Summer

**6. Completeness of Tender:**

All sundry equipment's, fittings, assemblies, accessories, hardware items, 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 components 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.

**7. Works to be done by the contractor:**

Unless and otherwise mentioned in the tender documents, the following works shall be done by the contractor, and therefore their cost shall be deemed to be included in their tendered cost:-

- (i) Foundations for equipment and components where required, including foundations bolts.
- (ii) (Cutting and making good all damages caused during installation and restoring the same to their original finish.
- (iii) Sealing of all floor openings provided by him for pipes and cables, from fire safety point of view, after laying of the same.
- (iv) Painting at site of all exposed metal surfaces of the installation other than pre-painted items like fittings, fans, switchgear/distribution gear items, cubical switchboard etc. Damages to finished surfaces of these items while handling and erection, shall however be rectified to the satisfaction of the Engineer-in-Charge.
- (v) Testing and commissioning of completed installation.
- (vi) Storage space for all equipment components and materials for the work.
- (vii) Cutting/removing of existing gypsum type false ceiling of suitable size for the work of fixing of armored cables on wall above false ceiling & repairing & painting of same.

**8. Storage and Custody of Materials:**

The contractor has to make his own arrangement for the storage of the material at site & necessary watch and ward of the electrical installation during the execution of work till the same is handed over to the department. No extra payment will be made on this account. The storage space shall however be arranged by the department at site, if available.

The main contractor shall arrange for proper storage of the electrical fans and fittings at site and that double lock system shall be arranged for the fans and fittings after receipt at site until the time they are taken for installation. The contractor shall however be responsible for proper storage and safe custody of the same till their installation and handing over to the department.

**9. Electric Power Supply and Water Supply:**

Power and water supply will be arranged by the contractor at the site for installation purpose. However, for final testing purpose after complete installation of the electrical items, electricity supply will be made available free of cost to the contractor. Contractor will take due care to ensure safety of electrical installation during execution of work.

**10. Tools & Machinery For Handling & Erection**

- (i) All tools and tackles required for unloading/handling of equipments and materials at site, their assembling, erection, testing and commissioning shall be the responsibility of the contractor.

- (ii) No T & P including special T&P etc. shall be issued by the Department and nothing extra shall be paid on account of this. The contractor will have to make his own arrangements at his expenses.
- (iii) All tools, plant and machinery provided by the contractor shall, when brought at the site, be deemed to be exclusively intended for the construction and completion of this work and the contractor shall not remove the same or any part thereof (save for the purpose of moving it from one part of the site to another) without the consent of the Engineer-in-charge.

**11. Co-ordination with other agencies:**

The contractor shall co-ordinate with all other agencies involved in the building work so that the building work is not hampered due to delay in his work. Recessed conduit and other works, which directly affect the progress of building work, should be given priority.

**12. Care of the building and other structures / installations**

Care shall be taken by the contractor while handling and installing the various equipments and components of the work to avoid damage to the building and its surrounding roads, pavements, horticulture work, boundary wall, sewer and water lines etc. He shall be responsible for repairing 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 the installation from the site of work.

**13. Structural Alterations to Buildings:**

- (i) No structural member in the building shall be damaged/altered, without prior approval from 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 required modifications or fresh provisions are required to be made, such contingent works shall be carried out by the contract at his cost.
- (iv) All such openings in floors provided by the department shall be closed by the contractor after installing the cables/conduits/rising mains/GI&MS Pipe etc. as the case may be, by any suitable means as approved by the Engineer-In-charge without any extra payment.
- (v) 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.

**14. Addition to an installation:**

Any addition, temporary or permanent, to the existing electrical installation shall not be made without a properly worked out scheme/design by a qualified Electrical Engineer to ensure that such addition does not lead to overloading, safety violation of the existing system.

**15. Data Manual and Drawings to be furnished by the Tenderers (as applicable):**

With Tender: The tenderer shall furnish along with the tender, detailed technical literature, pamphlets and performance data for appraisal and evaluation of the offer.

After Award of work: - The contractor shall prepare & submit three sets of following drawings and get them approved from the Engineer-In-Charge before the start of the work. The approval of drawings however does not absolve the contractor not to supply the equipments/ materials as per agreement, if there is any contradiction between the approved drawings and agreement.

- 1) General arrangement drawings of the equipments in the building with complete dimensions.
- 2) Any other drawings relevant to the work.

**16. Work in occupied buildings:**

- (i) When work is executed in occupied buildings, there would be minimum of inconvenience to the occupants. The work shall be programmed in consultation with the Engineer-in-charge and the occupying department. If so required, the work may have to be done even before and after the office hours.
- (ii) The contractor shall be responsible to abide by the regulations or restrictions set in regard to entry into, and movement within the premises.



- (iii) The contractor shall not tamper with any of the existing installations including their switching operations or connections there to without specific approval from the Engineer-in-charge.

**17. Drawings:**

- (i) The work shall be carried out in accordance with the building drawings issued by Engineer-in-charge. The electrical drawings for above work shall be prepared by the contractor and will be got approved by the Engineer-in-charge before execution of work.
- (ii) All wiring diagrams shall be deemed to be 'Drawings' within the meaning of the term as used in Clause 11 of the conditions of contract (PWD 7 or PWD 8). They shall indicate the main switch board, the distribution boards (with circuit numbers controlled by them), the runs of various mains and sub mains and the position of all points with their controls.
- (iii) All circuits shall be indicated and numbered in the wiring diagram and the points shall be given the same number as the circuit to which they are electrically connected.
- (iv) After award of the work, the firm will be required to submit the drawings for the proposed work including layout plan, conduit routes etc. Work will be carried out as per the approved drawings.

**18. Drawings/Documents to be furnished on completion of installation:-**

Three sets of the following laminated drawings shall be submitted by the contractor while handing over the installation to the Department. Out of these three, one set shall be laminated on a hard base for display in the control room/room. One set shall be displayed in Junior Engineer's room and one set for a designated area.

- 1. Manufacturer's technical catalogues of all equipments and accessories.
- 2. Operation and maintenance manual of all major equipments, detailing all adjustments, operation and maintenance procedure.

**19. General requirements of components:**

**Quality of material:** All materials and equipment supplied by the contractor shall be new. They shall be of such design, size and materials as to satisfactorily function under the rated conditions of operation and to withstand the environmental conditions at site.

**20. Inspection of materials and equipment:**

20.1 All major equipments shall be offered for initial inspection by the Engineer-In-Charge or officer authorized by him at manufacturer's works in India. The department may or may not inspect the material at its discretion. The contractor will intimate the date of testing of equipments at the manufacturer's works before dispatch. Contractor shall make all arrangements for inspection of material at works. Nothing Extra Shall be paid on this account. The department reserves the right to get the equipment inspected by third party inspection also. Such inspection shall be of following categories:

- A. Inspection of materials/ equipments to be witnessed at the manufacturer's premises/ at its authorized works in India, in accordance with relevant BIS/ Agreement Inspection Procedure.
- B. To receive material at site with manufacturer's Test certificates.
- C. To inspect material at the authorized dealer's go-down to ensure delivery of genuine material at site.
- D. To receive material after physical inspection at site.

20.2 Adequate care to ensure that only tested and genuine materials of proper quality are used in work shall be ensured by firm. The firm shall ensure that:

- i. Material will be ordered & delivered at site only with the prior approval of the department to ensure timely delivery.

- ii. As and when the order is placed for the fittings/ fixtures, cables, switchgears, poles, rising main, other main items etc, its copy shall be endorsed to the CPWD Engineer-in-charge.
- iii. The firm will be required to procure material like exhaust fans, MCB's & DB's, switches & sockets, wires & cables, conduits and switchgears etc. directly from the manufacturer/ authorized dealers to ensure genuineness & quality and as per the approved makes only. Proof in this regard shall be submitted by the contractor if required by the department.
- iv. Inspection at factory or at godown of the manufacturer, as required, shall be arranged by the firm if applicable for a mutually agreed date. Certificate for genuineness of the fittings shall have to be provided duly signed by the manufacturer's officer not below the rank of Regional Manager.
- v. Delivery of material shall be taken up only with the consent of department, after clearance of the material.
- vi. Department shall reserve the right to waive inspection in lieu of suitable test certificate, at its discretion.

20.3 Similarly, for fabricated equipment, the contractor will first submit dimensional detailed drawings for approval before fabrication is taken up in the factory. Suitable stage inspection at factory also will be made to ensure proper use of materials, workmanship and quality control.

## **21. Ratings of components:**

21.1 All components in a wiring installation shall be of appropriate ratings of voltage, current and frequency, as required at the respective sections of the electrical installations in which they are used.

21.2 All conductors, switches and accessories shall be of such size as to be capable of carrying the maximum current, which will normally flow through them, without their respective ratings being exceeded.

## **22. Compliance With Regulations And Indian Standards**

22.1 All works shall be carried out in accordance with relevant regulation, both statutory and those specified by the Indian Standards related to the works covered by this specification. In particular, the equipment and installation will comply with the following:

- a) Factories Act.
- b) Indian Electricity Rules.
- c) B.I.S. & other standards as applicable.
- d) Workmen's Compensation Act.
- e) Statutory norms prescribed by local bodies like CEA, Power Supply Co., etc.

22.2 Nothing in this specification shall be construed to relieve the successful tenderer of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with currently applicable statutory regulations and safety codes.

22.3 Successful tenderer shall arrange for compliance with statutory provisions of safety regulations and departmental requirements of safety codes in respect of labour employed on the work by the tenderer. Failure to provide such safety requirement would make the tenderer liable for penalty as decided by the University authority. In addition, the department will be at liberty to make arrangement for the safety requirements at the cost of tenderer and recover the cost thereof from him.

22.4 All components shall conform to relevant Indian Standard Specifications wherever existing. Materials with ISI certification mark shall be preferred.

22.5 Relevant Indian Standards including amendments or revisions thereof up to the date of tender acceptance shall be applicable in the respective contracts for respective items, firm to ensure its compliance

**23. Interchangeability:**

Similar parts of all switches, lamp holders, distribution fuse boards, Switch gears, ceiling roses, brackets, pendants, fans and all other fittings of the same type shall be interchangeable in each installation.

**24. Workmanship:**

- 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.
- Proper supervision/skilled workmen: The contractor shall be a licensed electrical contractor of appropriate class suitable for execution of the electrical work. He shall engage suitably/skilled/licensed workmen of various categories for execution of work supervised by super visors Engineer of appropriate qualification and experience to ensure proper execution of work. They will carry out instruction of Engineer-In-Charge and other senior officers of the Department during the progress of work.
- Use of quality materials: Only quality materials of reputed make as specified in the tender will be used in work.
- Fabrication in reputed workshop: Switch boards and LT panels shall be fabricated in a factory/workshop having modern facilities like quality fabrication, seven tank process, powder/epoxy paint plant, proper testing facilities, manned by qualified technical personnel. These shall be as per make / item approved.

**25. Testing:**

All testes prescribed in this General Specification, to be done before, during and after installation, shall be carried out, and the test results shall be submitted to the Engineer-In Charge in prescribed Performa, forming part of the Completion Certificate.

All expenditure to be incurred for testing of samples e.g. packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor

**26. Commissioning on completion:**

After the work is completed, it shall be ensured that the installation is tested and commissioned.

**27. Completion plan and completion certificate:**

27.1 For all works completion certificate after completion of work as given in Appendix –E of CPWD Specification shall be submitted to the Engineer-in-charge.

27.2 Completion plan for the following, along with three set of prints of the same shall also be submitted.

- (i) General layout of the building.
- (ii) Locations of main switchboard and distribution boards, indicating the circuit numbers controlled by them.
- (iii) Position of all points and their controls.
- (iv) Types of fittings, viz. fluorescent, pendants, brackets, bulk head, fans, exhaust fans etc.
- (v) Name of work, job number, tender reference, actual date of completion, names of Division/ Sub-division and name of the firm who executed the work with their signature.

**28. Warranties/Guarantee:**

- The Air Conditioners plant with all associated accessories (both electrical & civil) and work executed under said contract are to be guaranteed for trouble free operation, maintenance and service. The warranty should cover defects due to faulty manufacture, workmanship or material for **1 year from the date of commissioning** and handed over with the requisite documentation. In case the testing of the plant/equipment is delayed for any reason, beyond 6 months the defects liability shall extend for a minimum period of 6months from the date the test readings are accepted. The firm will be required to submit guarantee/warranty (as per OEM) of material from the manufacturer to the department.

- Any manufacturing defect found in the equipments or components, or any part thereof so found defective during this period shall be repaired/ replaced by the Contractor free of charge to the satisfaction of the Engineer-in-Charge and as per terms and conditions of NIT/ agreement executed with CURaj.
- Any breakdown call under this contract, the agency shall address the issue on site immediately within maximum 24 Hours of the email/message through any medium. In case of failure due to any unavoidable reasons/circumstances, the contractor has to address the issue within next 24 hrs with consent of the Engineer-in-Charge. Failing to which, penalty of Rs. 500/- per day shall be imposed against the agency & recovered from the security deposit.
- A record of such service should be duly acknowledged by the person in charge/user of the location and copy of the same has to be submitted to the Engineer-In-Charge.
- In case it is felt by the University that undue delay is being caused by the contractor in attending the defect/fault removed, the same will be got done by the department at the risk and cost of the contractor. The decision of Engineer-In-Charge in this regard shall be final.
- The Contractor has to carry out **quarterly preventive maintenance / service** during the defect liability period failing which penalty shall be imposed as per decision of the University.

## **29. Safety Code & Labour Regulations**

- A. In respect of all labour employed directly or indirectly on the work for the performance of the contractor's part of work, the contractor at his own expense, will arrange for the safety provisions as per the statutory provisions, B.I.S. Recommendations, Factory Act, workmen's compensation act, CPWD code and instructions issued from time to time. Failure to provide such safety requirements would make the tenderer liable for penalty for Rs. 200/- for each violation. In addition the Engineer-In-Charge, shall be at liberty to make arrangements and provide facilities as aforesaid and recover the cost from the contractor.
- B. The contractor shall provide necessary barriers, warning signals and other safety measures wherever necessary so as to avoid accident. He shall also indemnify CPWD against claims for compensation arising out of negligence in this respect. Contractor shall be liable, in accordance with the Indian Law and Regulations for any accident occurring due to any cause. The department shall not be responsible for any accident occurred or damage incurred or claims arising there from during the execution of work. The contractor shall also provide all insurance including third party insurance as may be necessary to cover the risk. No extra payment would be made to the contractor due to the above provisions thereof.

## **30. Completion Period**

The completion period of 04 (Four) Months indicated in the tender documents is for the entire work of planning, designing, etc., arrangement of materials & equipment's, delivery at site including transportation, installation, testing, commissioning and handing over of the entire system to the satisfaction of the Engineer-In-Charge.

## **31. Extent Of Work**

The work shall comprise of entire labour including supervision and all materials necessary to make a complete installation and such tests and adjustments and commissioning, as may be required by the department. The term complete installation shall not only mean major items of the plant and equipments covered by specifications but all incidental sundry components necessary for complete execution and satisfactory performance of installation with all layout charts whether or not those have been specifically mentioned in bill of quantity in the tender document. However, major equipment not covered in the scope of the work and required subsequently as an additional feature, not covered in the contract specifications, shall be paid extra. The decision of the Engineer-In-Charge in the matter shall be final and binding upon the contractor.

**32. Insurance And Storage**

All consignments are to be duly insured upto the destination from warehouse to warehouse at the cost of the contractor. The insurance covers shall be valid till the equipment is handed over duly installed, tested and commissioned.

**33. Painting**

The major equipments shall be factory final finish painted. The agency shall be required to do only touching to the damages caused to the painting during transportation, handling & installation at site, if there is no major damage to the painting. However hangers, supports etc. shall be painted with required shade including painting with two coats of anticorrosive primer paint at site as per the instructions of the engineer-in-charge.

**34. The order of preference in case of any discrepancy as indicated in condition no. 1 under “Conditions of contract” given in the Standard CPWD Contract form may be read as the following:**

- a) Nomenclature of item as per Schedule of Quantities.
- b) Additional specifications, particular specifications and special conditions for Electrical Works.
- c) General conditions.
- d) Contract Clauses of General conditions of contract for CPWD latest edition and amendment therein upto date (Date of call of tender) CPWD specifications for electrical works as applicable.
- e) Architectural/structural drawings and specifications mentioned in drawings.
- f) Indian standard specifications of BIS.
- g) Sound engineering practice as per directions of the Engineer-in-charge. (h) Manufacturer’s specifications.

A reference made to any Indian Standard Specifications in these documents, shall imply reference to the latest version of that standard, including such revisions /amendments as issued by the Bureau of Indian Standards upto last date of receipt of tenders. The contractor shall keep at his own cost all such publications of relevant Indian Standards applicable to the work at site.

**35. Indemnity**

The successful tenderer shall at all times indemnify the department, consequent on this works contract. The successful tenderer shall be liable, in accordance with the Indian law and regulations for any accident occurring due to any cause and the contractor shall be responsible for any accident or damage incurred or claims arising there from during the period of erection, construction and putting into operation the equipments and ancillary equipment under the supervision of the successful tenderer in so far as the latter is responsible. The successful tenderer shall also provide all insurance including third party insurance as may be necessary to cover the risk in his own interest. No extra payment would be made to the successful tenderer on account of the above.

**36. Safety Measures**

- All equipments shall incorporate suitable safety provisions to ensure safety of the operating personnel as per manufacturer’s standard practice.
- Work is to be carried out in such a manner that existing working of the building is not hindered. No payment on A/c of idle labour for this reason shall be made to contractor.
- The contractor shall take all safety precautions to avoid accidents by exhibiting caution boards, red flags, red lights and by providing necessary barriers and all other measures required from time to time. The contractor shall be responsible for all damages and accidents due to negligence on his part.

**37. After Sales Services:**

The contractor shall ensure adequate and prompt after sales service in the form of maintenance, spares and personnel as and when required and shall minimize the breakdown period. In case of

equipment supplied by other manufacturers the firm shall furnish a guarantee from the manufacturer for the same before the plant is taken over.

38. The department shall deduct GST as per Tax Act and Income Tax and other taxes on the value of work done from each bill of the contractor as per prevailing Government instructions/orders. Labour cess as per building and other construction worker's welfare cess act 1996 shall also be deducted from all the bills payable to the firm. In lieu, the department shall issue a certificate of deduction of tax at source to the contractor in relevant forms.
39. The main contractor shall not indulge in procurement of electrical items and getting the work done on labour contract with the electrical contractor. The whole electrical component shall be executed by the eligible electrical contractor on a turnkey basis i.e. procurement of material & engaging labour. The associate electrical contractor shall submit the completion certificate of electrical work executed by him along with necessary test reports, completion plan etc. If Composite contractor himself meets eligibility conditions for execution of electrical work then he may not associate any other eligible electrical contractor.
40. The contractor shall give due notices to Municipality, Police and/or other authorities that may be required under the law/rules under force and obtain all requisite permissions/licenses for temporary obstructions/enclosures and pay all charges which may be leviable on account of his execution of the work under the agreement. Nothing extra shall be payable on this account.
41. The contractor shall leave such recesses, holes, openings, etc., as may be required for the electric, airconditioning and other related works. (For this purpose, any required inserts, sleeves, brackets, conduits, base plates, insert plates, clamps etc. shall be arranged by the contractor and fix the same at the time of casting of concrete, stone work & brick work, if required, and nothing extra shall be payable on this account.
42. The contractor shall give a trial run of the equipments and machinery for establishing its capability to achieve the specifications within laid down tolerances to the satisfaction of the Engineer-in-charge before commencement of work.
43. The work will be carried out in close coordination with the building work and other agencies. Conduits will be laid in the slab within the specified time and it will have to be ensured that the casting of slabs is not delayed for want of laying of conduits. The conduits will also be laid in walls before the Plaster work is undertaken so as to avoid breaking cutting of plaster while making chase for laying of conduits subsequently. The contractor will have to employ adequate labour for carrying out the work. No claim regarding the idle labour for any reason will be entertained by the Department.
44. All materials shall be got checked & approved by the Engineer-in-charge on receipt of the same at site before use and rejected material is to be removed from the site immediately.
45. No foreign exchange shall be made available by the department for the purchase of equipments, plants, machinery, materials of any kind or any other items required to be carried out in execution of work.
46. All items which are not covered while carrying out electrical work shall be removed and shall be cleared by the contractors as soon as the work is completed.
47. The contractor shall carry out his work, so as not to interfere with or hinder the progress or completion of the work being performed by other contractor (s) or by the Engineer-in-charge and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed, so as not to interfere with the operations of other contractors, or he shall arrange his work

with that of the others in an acceptable and coordinated manner and shall perform it in proper sequence to the entire satisfaction of Engineer-in-charge.

48. It shall be responsibility of the main contractor to sort out any dispute involved with the associated contractor without any time and cost overrun to the department. The main contractor shall be solely responsible for settling the dispute/litigation arising out of his agreement with the associate contractor. The contractor shall ensure that the work shall not suffer on this account.
49. The contractor shall quote his rates considering the specifications, terms & conditions and particular specifications and special conditions etc. and nothing extra shall be payable whatsoever unless otherwise specified.
50. The main contractor shall be responsible for coordinating the activities of all works and essential progress of works as per milestone and laid down programme.
51. The contractor shall be responsible for the watch and ward of the site/property/material provided by him and materials issued by the department against pilferage and breakage during the period of execution and thereafter till the work is completed and physically handed over to the department.
52. Samples of all materials, fittings and other materials/articles required for execution of the work shall be got approved from the Engineer-in-charge. Materials/articles manufactured by the firms of repute as indicated in tender documents and approved by the Engineer-in-charge shall only be used.
53. The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material or work beyond set out tolerance limits shall be summarily rejected by the Engineer-in-charge.
54. The contractor shall be required to make a sample Room for each type at the earliest opportunity using all approved materials for approval of Engineer in charge before mass scale finishing works are taken up.
55. Even ISI marked materials shall be subjected to quality test at the discretion of the Engineer-in-charge besides testing of other materials as per the specifications described for the item/material. Whenever ISI marked, materials are brought to the site of work; the contractor shall, if required by the Engineer-in-charge, furnish manufacturers test certificates to establish that the materials procured by the contractor for incorporation in the work satisfy the provisions of IS codes relevant to the material and/or the work done.
56. The contractor shall have to engage well experienced skilled labour and deploy modern T&P and other equipments to execute the work. The contractor will have to ensure that the skilled labour i.e. wireman etc., Engaged in the execution of the work must possess valid electrical license, otherwise he will not be permitted to execute the work.
57. The associate contractors executing the electrical works must possess the valid electrical contractor license otherwise they will not be permitted to execute the electrical works.
58. The contractor will have to make his own arrangement for storage of materials. No storage space shall be provided by department.
59. Priority to arrange the material shall be decided by the department. However, material required for the work shall be brought at site only at the appropriate time keeping in view the progress of building works as well as Electrical & Mechanical works. Decision of Engineer-In -Charge in this regard shall be final.

60. The contractor has to intimate his authorized representative, who will be receiving instructions in his absence. The contractor /his authorized representative is bound to sign the site order book as and when required by the Engineer-in-charge and to comply with the instructions therein.
61. All the E&M major equipments to be supplied by the minor component agency shall confirm to Make In India policy of government of India as per which the value of indigenously manufacture components the products shall be more than 50% of the value of the products. The minor component agency shall submit a certificate / affidavit on a non-judicial stamp paper of value Rs.100/- shall obtain from original equipment manufacturers confirming the above.

**Note:** The quantity of material in the BOQ is indicative. Contractor has to assess the actual requirement of material at site before placing the order, keeping in view the drawing and site requirement from the shortest route. No claim for payment for unused excess material shall be entertained.

#### **ADDITIONAL CONDITION FOR MISUSE OF PAYMENT RECEIVED AGAINST ADVANCE PAYMENTS**

1. Till the work is almost completed to the satisfaction of Engineer-in-charge,
  - (i) Contractor shall not divert any advance payments or part thereof for any purpose other than needed for completion of the contracted work. All advance payments received as per terms of the contract (i.e. mobilization, secured against materials brought at site, secured against plant & machinery and / or for work done during interim stages, etc.) are required to be reinvested in the contracted work to ensure advance availability resources in terms of materials, labour, plant & machinery needed for required pace of progress for timely completion of work.
  - (ii) All running account bills preferred by the contractor for advance payments shall be processed only if Engineer-in-charge is satisfied that upto date investments (excluding security deposit & performance guarantee, which are not considered as investments) made by the contractor against contracted work are more than the payments received. Accordingly, all running account bills shall be supported with an account of up-to-date payments received vis-à-vis upto date investments made on the work to enable engineer-in-charge to check to his satisfaction that the payments made by engineer-in-charge are property utilized only on the work and nowhere else.”



## **TECHNICAL SPECIFICATIONS FOR INTERNAL & EXTERNAL EI WORKS**

1. The work shall be executed as per CPWD's general specification for Electrical Works Part-I (Internal) 2013, Part-II (External) 2007, Part-IV (Sub-station) 2013, Part-V (Wet Riser and Sprinkler System for Fire Fighting Installation) 2006, Part-VI (Fire Alarm System), Part-VII (DG Set) 2013 and CPWD General Specification for Electrical Works (Part III Lifts & Escalators-2003), IE Rules, Indian Standards amended upto date and as per direction of Engineer-in-Charge. The additional specifications are to be read with above and in case of any variations; specifications given along with the tender shall apply.
2. The contractor shall bring sample of materials for approval of the Engineer-in-charge. Sample of approved materials must be kept at site for inspection/comparison with materials to be used in work by senior officers. All materials shall be delivered with manufactures test certificates and technical catalogues, instructions manuals, wiring diagram etc. as required.
3. However, it shall be the responsibility of the Contractor to ensure that all wiring work has been carried out as per specification and till fixing of Electrical lighting fixtures it will be responsibility of the contractor that all points/ circuit wiring are in intake in position and in working order.
4. All hardware items such as screws, thimbles, connectors, earth/neutral terminals, wires etc. which are essentially required for completing any item as per specifications will be deemed to have been included in the item even when the same have not been specifically mentioned.
5. All hardware material such as nuts/bolts/screws/washers etc. to be used in the work shall be zinc/cadmium plated iron. The galvanized boxes of modular switch/sockets etc. shall be of the same make as of switch/socket etc.
6. While laying conduit, suitable minimum number of junction boxes shall be left for pulling the wires. These shall be placed in such a way that the same do not remain noticeable.
7. Multi stranded FRLS PVC insulated copper conductors, wires are to be used in the work. Termination of multi-stranded conductors shall be done using crimping type copper thimbles at both the ends. Nothing extra shall be paid for the same.
8. The contractor shall follow the shortest route for circuits, submain, point wiring etc.
9. The connections of switches, sensors, earthing conductors & interconnections cables shall be made by adequate rating thimbles of approved standard makes only and nothing extra on this account shall be paid.
10. Check nuts shall be provided while terminating the M.S. conduits in switch board boxes for which nothing extra shall be paid.
11. All distribution boards shall be marked with circuits controlling the rooms/area/SDB controlled.
12. Material to be used in the work shall be ISI marked. The makes of material have been indicated in the list of acceptable makes. No other make will be acceptable. The material to be used in the work shall be got approved from the Engineer-in-charge before its use at site. The Engineer-in-charge shall reserve the right to instruct the contractor to remove the material which, in his opinion, is not as per specifications
13. While deciding the size of switch boxes for light points/fan point, exhaust fan point items, extra two modules will be provided for each fan point for fixing of regulator(s) (fan regulator is to be provided under different item). Wherever extra modules are available, the same shall be provided with blanking plates without any extra cost.

14. Modular type switches/sockets/telephone outlets/TV sockets are to be provided wherever indicated in the items. The same shall be of only one make. The modular plates of switches, sockets, telephone & TV sockets etc. shall be in two parts i.e. plates with frames with in quoted rates.
15. The building shall be provided with false ceiling in various areas. In order to avoid maintenance problem, the contractor will not provide any ceiling rose/connector/looping box etc. above the false ceiling. The point wiring in that case will be extended up to the fitting/fan etc. directly without provisions of any termination arrangement in between. The wire from the end point up to the fixture shall be considered to be included in the point wiring. Nothing extra shall be paid for the same.
16. Wherever it is not possible to provide rigid conduits, flexible conduit pipe shall be provided for drawing/running the wires. However, such arrangement has to be kept to the barest minimum and only with the prior approval of Engineer-in-charge.
17. Earthing and all hidden items of work shall be carried out in the presence of the Engineer-in-charge or his authorized representative.
18. The fan box cover shall be made from 3mm thick phenolic laminated sheet as per CPWD specification.
19. The contractor shall provide only metallic junction boxes/looping boxes with cover of required sizes even in PVC conduiting and such boxes shall be measured as a part of conduit/wiring without any extra payment.
20. The metallic junction boxes & looping boxes shall be covered with approved makes of phenolic laminated sheet. For telephone, television & fire alarm system shall be provided at all the floors within scope of work without any extra cost as per requirement & layout approved by Engineer-in-charge.
21. The quantities of various items may vary from the quantities given in schedule of work. The agency shall bring the various items & materials as per actual requirement at site at the time of execution of work. Excess quantities shall not be accepted & paid by the department.
22. The ceiling roses wherever required to be provided are included in the scope of work without extra payment and the same shall also be of modular type & of the same make as that of switches & sockets along with earthing provision.
23. The models of the LED fittings from given makes will be finalized at the time of execution based on specification given in BOQ.
24. All repairs & patch work shall be neatly carried out to match with the original finish & all damages caused to the building installation during the execution of work shall have to be made good by the contractor immediately at his own cost to the entire satisfaction of Engineer-In charge. In case contractor fails to comply with the instructions of the Engineer-In-charge, Engineer-In-Charge shall be at liberty to get the work done by any other agency and recover such amount as paid to the other agency from the bill(s) of the contractor. Contractor shall have no claim, whatsoever, on the extent of such amount.
25. It shall be responsibility of contractor to provide polythene/PVC plastic cover for all SDBs/meter boards/feeder pillars/panels etc. so as to protect them from wear & tear/damage during execution stage. Contractor shall provide the covers for the materials if any being supplied departmentally also. Nothing extra shall be paid on this account.
26. All debris/malba resulting due to electrical work shall be removed on daily basis and completion of the work shall only be accepted after the site has been cleaned of all malba. In case, contractor fails to comply, the same shall be got removed by the other agency and the payment so made shall be recovered from the bill(s) of the contractor.

27. Copper lugs shall be provided for terminating copper wires and aluminum lugs to be provided with aluminum conductor. GI earth wire/cable to all terminating places for which nothing extra shall be paid. All multi-stranded/ stranded wires shall be terminated through copper lugs.
28. Contractor shall have to check the Site Order Book for any instructions of the Engineer-in charge or his authorized representative and sign the site order book. He shall be bound to ensure compliance with the instructions recorded therein.
29. If the main contractor does not have authorization/ electrical license for carrying out the electrical work as per Govt of India norms then may main contractor have to associate or carry out the same from authorized electrical licensed contractor.
30. Suitable back plates providing for fixing the wall brackets and ceiling flush fittings shall be supplied by the contractor free of cost.
31. The firm shall use only electrically operated chase cutting machine for cutting the chases in the wall for recessed conduit wiring.
32. Contractor is fully responsible for any kind of damage to the LT/HT cable during execution of work. No joints shall be allowed if the cable is damaged. Contractor has to replace the full length at his own cost.
33. The MCB/MCCB and switch accessories should be of same make as that of MCB DBs and Modular Switch boxes respectively. The make of cable end boxes will also be same that of MCBDBs.
34. Colour coding shall have to be adopted in the wiring system as per specification.
35. Tinned copper Earthing lugs/Thimbles/ferrules shall be provided for termination of earth wire to all Metallic outlet boxes/fittings/fixtures/fan regulator/MCB DB/switch board/Meter board etc., properly crimped/brazed/soldered for which nothing extra shall be paid.
36. Suitable crimping tools shall be used for crimping the lugs/thimbles/ferrules. Nothing extra shall be paid on this account. The lugs/thimbles/ferrules pressed by conventional/ordinary pliers shall not be accepted.
37. A suitable brass/tinned copper neutral link shall be fixed at suitable place in the Metallic outlet boxes of all sizes to terminate neutral wire properly. Nothing extra shall be paid on this account.
38. An earth termination with earth stud of brass/tinned copper i/c 2 No. metallic washers or suitable earth bar of Brass/tinned copper with tinned copper thimbles/ferrules/lugs should be suitably fixed at suitable place in the Metallic outlet box for termination of protective earth conductor. Nothing extra shall be paid on this account.
39. In the outlet boxes, phase from one switch to other switch shall be looped with suitable size of solid copper conductor. Nothing extra shall be paid on this account. Stranded conductor shall not be accepted.
40. Only required number of knockouts should be removed from Metallic outlet boxes for entry of conduits. If more than required number of knockouts are removed, the Metallic outlet box shall not be accepted.
41. Separate GI boxes shall be used for staircase light switches and bell push. Nothing extra shall be paid on this account.
42. Metal sheath of Co-axial T.V. cable shall be terminated using 'U' shape thimble/lugs/ferrules. Nothing extra shall be paid on this account.
43. To facilitate drawing of wires 16/18 SWG GI fish wire be provided along with laying of recessed conduit. Nothing extra shall be paid on this account.

44. Cable connection to switch gear is deemed to be included in the item of end termination. No extra payment shall be made for that.
45. **Testing of Materials:** Regarding testing of electrical materials, which cannot be tested in site laboratory and/or to be tested at an independent laboratory, the testing of materials shall be conducted in Govt. Laboratory/ Govt. colleges/ IITs/NITs or from the laboratory approved by the Engineer-In-Charge.

All expenditure to be incurred for testing of samples e.g. packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor.

## **SPECIFICATIONS AND CONDITIONS FOR HVAC WORK**

1. The work is to be carried out in accordance with the CPWD GENERAL SPECIFICATIONS for HEATING, VENTILATION & AIR-CONDITIONING (HVAC) WORKS (2017) with latest amendments upto date of submission of bid.
2. In case of any ambiguity, the Specifications mentioned in following order will prevail :
  - a) Schedule of Work of NIT document
  - b) CPWD Manuals and Specifications with latest amendments
  - c) Manufacturer's Manuals and Specifications
  - d) As decided by Engineer-In-Charge.
3. The tentative Heat Load Calculation and drawing is enclosed with NIT document. The detailed mentioned in the drawings are tentative and shall vary as per the site requirement. The work shall be carried out as per the site and decision of the Engineer-In-Charge shall be final and binding.
4. The contractor has to execute the **Operation of HVAC Plant** installed in the said contract during the defect liability period of one year. The conditions of operation part of contract shall be as under:
  - a) The operation part shall be commenced from the date of commissioning of plant and shall remain valid for period of one year.
  - b) Depute one skilled operator for operation of HVAC plant on daily basis during office hours & all week days of a month.
  - c) The operator shall have adequate knowledge and able to attend minor breakdown calls and undue noise in equipment / vibrations / leakages in pumps & valves/ malfunctioning of machinery or plant etc.
  - d) Preventive Maintenance/ Servicing of AC System during DLP period on quarterly basis.
  - e) All the required consumable materials like cotton waste, Dhoti and petroleum jelly for cleaning of various installations shall be in the scope of contractor for which nothing etc. shall be paid extra.
  - f) The history sheet of routine inspection/ servicing/breakdown repairing of each and every unit shall be maintained. The copy of report shall be submitted along with the bill subsequent to the servicing activity.
  - g) **Break-down Call:**
    - Any breakdown call under this contract, the agency shall address the issue on site immediately within maximum 24 Hours of the email/message through any medium. In case of failure due to any unavoidable reasons/circumstances, the contractor has to address the issue with in next 24 hrs with consent of the Engineer-in-Charge. Failing to which, penalty of Rs. 500/- per day shall be imposed against the agency & recovered from the bill.
    - A record of such call should be duly acknowledged by the person in charge/user of the location and copy of the same has to be submitted along with estimate to the Engineer-In-Charge.
  - h) The contractor shall be responsible for the good conduct and behavior of his employees. If any employee of the contractor is found misbehaving with the supervisory staff or any other staff member of the University, the contractor shall terminate the services of such employees at their own risk and responsibility, on the recommendation of the Officer-In-Charge of the University.

- i) In off season there is during the lien period of winter the contractor shall carrying out all the preventive maintenance works in order to keep the equipment ready for use for the next summer. It shall be the responsibility of contractor to intimate the department regarding any major repair/replacement required to keep the equipment functional beyond the scope of contractor.
- j) The contractor shall be liable for payment of deputed operator and compliance of all labor law and other GoI statutory compliances.
- k) **Payment** for operation part shall be released on quarterly basis duly verified by the concern Officer-In-Charge.
- l) In case any item is to be taken to the Service Station/Workshop for repairs etc. the prior permission is to be taken from the Engineer In Charge. CURAJ will not pay any charges for transportation or any other kind of charges. The agency shall be responsible for any damage occurred /loss of any government property owing to negligence on his or his representative's part while repairing or taken for repair at workshop.
- m) Any damage or loss caused to connected equipment or their parts due to negligence, mishandling shall be made good by the contractor either by payment in cash as per prevailing market rate of that item or by a new replacement of the same/higher make and specifications.
- n) Any damage resulting to the system on account of the negligence or mall- operation shall be made good by the contractor. Care shall also be taken not to damage installation by improper handling. Nothing extra will be paid for such work.
- o) The contractor or his representative should not remove, disturb, and dislocate the existing equipment and its parts from its positions until and unless it is authorized by the Engineer-in – Charge.
- p) The Contractor shall maintain the log books which include number of services provided during contract period with dates and part of equipment got repaired or replaced, with its proper model number and necessary details.
- q) The Contractor shall maintain register indicating details of equipment being maintained and details of rooms/ offices/ department/ locations where they are installed with proper model number, make, capacity and necessary details.
- r) All the workers and engineers of the agency visiting the University Campus for service and repair work shall be well dressed and hold a valid Id-Card of the agency/firm. All the safety measures like rubber gloves, safety shoes, helmet etc. shall be taken care by the firm while working.
- s) The contractor shall take all precaution for safety of the workmen. If any accident/mishap occurs, the department shall not be responsible for the same. Consequently any compensation payable shall be at the contractor cost.
- t) All T & P as and when required by the operator for repairs or checking shall be arranged by the contractor and nothing extra shall be paid on this account. Water & Electricity shall be provided at one point free of cost.

**ANNEXURE – I**  
*(to be submitted with technical bid)*

**INFORMATION REGARDING ELIGIBILITY  
LETTER OF TRANSMITTAL**

From:

To  
The Executive Engineer  
.....

Subject: Submission of bids for the work of .....

Sir,

Having examined the details given in the bid document for the above work, I/we hereby submit the relevant information.

1. I/we hereby certify that all the statement made and information supplied in the enclosed forms A to E and accompanying statement are true and correct.
2. I/we have furnished all information and details necessary for eligibility and have no further pertinent information to supply.
3. I/we submit the requisite certified solvency certificate and authorize the Executive Engineer .....to approach the Bank issuing the solvency certificate to confirm the correctness thereof. I/we also authorize Executive Engineer ..... to approach individuals, employers, firms and corporation to verify our competence and general reputation.
4. I/we submit the following certificates in support of our suitability, technical knowledge and capability for having successfully completed the following eligible similar works:

Name of work	Certificate from

Certificate : It is certified that the information given in the enclosed eligibility bid are correct. It is also certified that I / We shall be liable to be debarred , disqualified / cancellation of enlistment in case any information furnished by me / us is found to be incorrect.

Enclosures:

Date of submission:

Seal of bidder

Signature(s) of Bidder(s)

**ANNEXURE-II**  
*(to be submitted with technical bid)*

**FORM 'A'**  
**FINANCIAL INFORMATION**

- I. Financial Analysis - Details to be furnished duly supported by figures in balance sheet/ profit & loss account for the last five financial years duly certified by the Chartered Accountant, as submitted by the applicant to the Income Tax Department (Copies to be attached).

Financial years					
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- (i) Gross Annual Turn Over on construction works.  
(ii) Profit/Loss(standalone financial statement and consolidated financial statement both).

- II. Financial arrangements for carrying out the proposed work.

Signature of Chartered Accountant with Seal

Signature of Bidder(s)



**ANNEXURE-II**  
*(to be submitted with technical bid)*

**FORM "B"**  
**BANKER'S CERTIFICATE FROM A COMMERCIAL BANK**  
**(OM No. DG/SOP 2022/07 dated 09.11.2022)**

This is to certify that to the best of our knowledge and information that M/s./ Sh..... having marginally noted address, .....as a Customer of our bank are/ is respectable and can be treated as good for any engagement upto a limit of Rs..... (Rupees.....)

This certificate is issued without any guarantee or responsibility on the bank or any of the officers.

(Signature) For the Bank

**NOTE**

1. Banker's Certificates should be on letter head of the Bank, addressed to tendering authority.
2. In case of Partnership firm, certificate should include names of all partners as recorded with the Bank.

**FORM "B-1"**  
**FORM FOR CERTIFICATE OF NET WORTH FROM CHARTERED ACCOUNTANT "**

It is to certify that as per the audited balance sheet and profit & loss account during the financial year ..... , the Net Worth of M/s ..... (Name & Registered Address of individual/firm/ company), as on ..... (the relevant date) is Rs. .... after considering all liabilities. It is further certified that the Net Worth of the company has not eroded by more than 30 % in the last three years ending on (the relevant date)." Unique Document Identification Number (UDIN) .....

Signature of Chartered Accountant .....  
Name of Chartered Accountant .....  
Membership No. of ICAI .....  
Date and Seal .....

**ANNEXURE-II***(to be submitted with technical bid)***FORM 'C'****DETAILS OF ELIGIBLE SIMILAR NATURE OF WORKS COMPLETED DURING THE LAST SEVEN YEARS ENDING PREVIOUS DAY OF LAST DAY OF SUBMISSION OF TENDERS**

S. No.	Name of work/ project and location	Owner or sponsoring organization	Cost of work in crores of rupees	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Litigation/ arbitration cases pending/ in progress with details*	Name and address/ telephone number of officer to whom reference may be made	Whether the work was done on back to back basis Yes/ No
1	2	3	4	5	6	7	8	9	10

\* Indicate gross amount claimed and amount awarded by the Arbitration Tribunal.

Signature of Bidder(s)

**FORM 'C'-1****PROJECTS UNDER EXECUTION**

S. No.	Name of work/ project and location	Owner or sponsoring organization	Cost of work in crores of rupees	Date of commencement as per contract	Stipulated date of completion	Upto date percentage progress of work	Slow progress if any and reasons thereof	Name and address/ telephone number of officer to whom reference may be made	Remarks
1	2	3	4	5	6	7	8	9	10

Signature of Bidder(s)

## ANNEXURE-II

*(to be submitted with technical bid)*

### FORM "E"

#### STRUCTURE & ORGANISATION

1. Name & address of the bidder
2. Telephone no./Telex no./Fax no.
3. Legal status of the bidder (Scan & upload copies of original document defining the legal status)
  - (a) An Individual
  - (b) A proprietary firm
  - (c) A firm in partnership
  - (d) A limited Company or Corporation

4. Particulars of registration with various Government Bodies (Scan & upload attested photocopy)

Organization/Place of registration	Registration No
1.	
2.	
3.	

5. Names and titles of Directors & Officers with designation to be concerned with this work
6. Designation of individuals authorized to act for the organization
7. Has the bidder, or any constituent partner in case of partnership firm, limited company / Joint Venture, ever been convicted by the court of Law? If so, give details
8. In which field of Civil Engineering construction the bidder has specialization and interest?
9. Any other information considered necessary but not included above.

Signature of Bidder(s)

### **ANNEXURE-III**

*(to be submitted with technical bid)*

#### **SELF DECLARATION CERTIFICATE (To be submitted on Non-Judicial Stamp Paper of Rs. 100/-)**

I hereby certify that the ..... firm has not been ever blacklisted by any Central / State Government / Public Undertaking / Institute on any account.

I also certify that firm will execute the work as per the specification given by Institute and also abide all the terms and conditions stipulated in tender.

I also certify that the information given in the bid is true and correct in all aspects and if in any case at a later date it is found that any detail/s provided are false and incorrect, any contract given to the concern firm or participation may be summarily terminated at any stage, the firm will be blacklisted and Institute may imposed any action as per rules.

Date:

Name :

Place:

Business Address :

Signature of Bidder :

Seal of the Bidder :

**ANNEXURE-IV**  
*(to be submitted with technical bid)*

**UNDERTAKING FOR SUPPLY OF GENUINE PARTS**  
**(on letter head of firm)**

I hereby certify that the ..... firm will supply genuine spare parts of the Air Conditioners Plant/System required during defect liability period/AMC period, etc or as and when required or as per directions of the Engineer-In-Charge.

I also certify that the firm will execute the work as per the standards of manufacturer and specification given by department and also abide all the terms and conditions stipulated in NIT document.

Date:

Name :

Place:

Business Address :

Signature of Bidder :

Seal of the Bidder :

## ANNEXURE-V

*(to be submitted with technical bid)*

### FORM OF PERFORMANCE SECURITY (GUARANTEE) BANK GUARANTEE BOND

In consideration of the President of India (hereinafter called " The Government") having offered to accept the terms and conditions of the proposed agreement between.....and .....(hereinafter called "the said Contractor(s)") for the work.....(hereafter called "the said agreement") having agreed to production of a irrevocable Bank Guarantee for Rs.....(Rupees.....only) as a security/guarantee from the Contractor(s) for compliance of this obligations in accordance with the terms and conditions in the said agreement.

We.....(hereinafter referred to as "the Bank") hereby (indicate the name of the Bank) undertake to pay to the Government in amount not exceeding Rs.....(Rupees.....Only) on demand by the Government.

2) We ..... do hereby undertake to pay the amounts due and payable (indicate the name of the Bank) under this Guarantee without any demure, merely on a demand from the Government stating that the amount claimed is required to meet the recoveries due or likely to be due from the said Contractor(s). Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs.....  
.....(Rupees.....only).

3) We, the said bank further undertake to pay to the Government any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Contractor(s) shall have no claim against us for making such payment.

4). We ..... further agree that the guarantee herein contained(indicate the name of the Bank) shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the Government under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Engineer-in-Charge on behalf of the government certified that the terms and conditions of the said agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this guarantee.

5) We ..... further agree with the Government that(indicate the name of the Bank) the Government shall have the fullest liberty without our consent and without effecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said Contractor (s) and to for bear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor(s) or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6) This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s).

7) We ..... lastly undertake not to revoke this (indicate the name of the Bank) guarantee except with the previous consent of the Government in writing.

8) This guarantee shall be valid upto ..... . Unless extended on demand by Government. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs. .... (Rs. .... only) and unless a claim in writing is lodged with us within 6 Months of the date of expiry or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged. Dated the ..... day of ..... for  
..... (indicate the name of Bank)

## ANNEXURE-VI

### PREFERRED MAKES OF EQUIPMENT & MATERIALS

S. No	Details of Materials / Equipments	Manufacturer's Name / Make
	<b>ELECTRICAL – HT, LT &amp; Substation Equipments</b>	
1.	MCB, Isolator, Industrial Plug Socket, RCCB, RCBO's	Schneider Electric ACTI-9 (N) / Legrand (DX <sup>3</sup> ) / Hager/ L&T (Exora) / C&S (Win Trip 1/2) / ABB (S200M) / Siemens (Betaguard)/MK (Honeywell)/ Panasonic (Europa)
2.	MCBDB & Loose Wire Box	Legrand (EKINOX-3) / L&T (EXORA) / C&S (Win Class)/ Hager (Novello) / Schneider (ACTI-9) / ABB (Elegance) / Siemens/MK (Honeywell)/ Panasonic (Europa)
3.	Change Over Switches	L&T / Havells / HPL / Hager / C&S / Socomac / ABB
4.	Automatic Transfer Switch(ATS)	Asco (Schneider) / Russel / Socomac / Hager / ABB / Legrand / L&T / Havells
5.	FRLS PVC insulated copper conductor single core cable for wiring. (ISI marked)	Finolex / RR Kabel / KEI /Havells / Polycab / Gloster/ Batra Henley
6.	Armoured/Unarmoured telephone cable, Coaxial Cable / LAN Cable	Delton / Finolex / RR Kabel / Polycab/Havells / Bonton / Grandlay / KEI/ Gloster/ RPG cables
7.	MS Conduit (ISI Marked)with heavy duty MS conduit pipe accessories	BEC / NIC / AKG
8.	PVC Conduit (ISI Marked) with heavy duty PVC conduit pipe accessories	AKG / Norpack / BEC / Polycab / Precision / Astral / Finolex
9.	Modular Switch, Socket/Telephone Socket/ Cable TV Socket/ Data outlet Socket / Fan Regulator/ G.I. Boxes Etc./Modular MCB	Legrand (Arteor) / Schneider Electric (Zencelo) / Honeywell- MK (Orna)/Panasonic (Vision)
10.	Selector Switch & Toggleswitch	Salzer (Larsen & Toubro) / Siemens / Kaycee / C&S /Schneider
11.	PVC Trunking	MK (Honeywell)/ Legrand / Schneider/ Hager/C&S
12.	GI pipe (ISI Marked)	Tata / Jindal (Hissar) / SAIL /Prakash Surya
13.	Paints	Asian / Berger /Dulux
14.	Terminal Blocks and Connectors	Elmax / Wago / Hensel / Connectwell
15.	Phenolic Laminated Sheet / Bakelite Sheet	Hylam / Formica (P-I Grade) / Mylam / Greenlam
16.	Cat-6 /Cat-6A Cable, Wires& Fiber Optic Cable	Amp / Beldon / Legrand / Krone Communication/ Molex/ Avaya
17.	Indoor and Outdoor LED fittings /LED Lamp/ LED Tube	Wipro / Philips / Trilux / Crompton/ Havells/ Panasonic Halonix/ Bajaj/ Surya
18.	Exhaust Fan	Havells /Crompton Greaves / USHA / Almonard / Alstom
19.	BLDC Ceiling Fan	Havells / Crompton Greaves / Atomberg Gorilla / Usha/Anchor/ Orient/Almonard
20.	Wall Bracket Fitting	Havells / Decon / Jaquar / Philips / Bajaj / Tisva (Usha)/Crompton



21.	Geysers	Racold / CG / Havells / Jaquar / AOSmith / Usha
22.	Air circulator / Wall Fan	Havells / Usha / Almonard / Crompton / Orient
23.	Ornamental Pole (Factory Finish)	Valmont/ Philips / Crompton/ Wipro / Bajaj/ Keselecshreder / Halonix
24.	Hot Dipped Galvanized Octagonal Pole /High Mast	Valmont / Philips / Crompton / Wipro / Bajaj / Kesele / Utkarsh /Halonix
25.	Polycarbonate Junction Box / Enclosure / Pole box	Hensel / Spelsberg / Naptune-Bals / Syntex/ Standard
26.	LT Panel / Meter Panel Board/Outdoor Feeder Pillar / APFC Panels	Tricolite Electrical Industries / Control & Switchgears Electrical Ltd. / Sterling & Wilson / Milestone / Adlec Control System Pvt. Ltd. / Advance Panels & Switchgear Pvt. Ltd. Haridwar / BSPL (Bhopal)/ Engineers & Engineers (Electricals) Pvt. Ltd. / Peaton Electrical Co. Ltd. / ASPL (Associated Switchgears & Projects Ltd.)/SHALABH/ Neptune /R.P. Control /Allied engineers/ Pyrotech India Electronic Pvt. Ltd. Udaipur /Johns electric co.pvt Ltd Jaipur
27.	XLPE insulated PVC sheathed Alum. / Copper Conductor Armored cable of 1.1 KV grade (ISI Marked)	Finolex / Polycab/ KEI / Havells / RR Kabel /Grandlay/ LAPP/ RPG/AKG/Plaza Cables
28.	Rising main / Bus Trunking	C&S / L&T / Schneider / Legrand / Godrej
29.	Moulded Case Circuit Breaker (MCCB) Thermal Release / Microprocessor based (Ics=Icu=100%)	Schneider Electric (CVS Series) / Siemens (VL Series) / L&T (D-Sine) / Legrand (DPX3) / C&S (Winbreak1/2) / ABB (TMax) / Hager
30.	Contactors/Relay /Timer	Schneider Electric / L&T / BCH / Siemens / Legrand / ABB / C&S / Hager/
31.	Potential Transformers / Current Transformer	Automatic Electric / Matrix / Precise / L&T / Kappa /Procom
32.	LED type indicating lamps / Push Button	Schneider Electric / L&T / Siemens / Vaishno
33.	Digital Meters (A/V/PF/Hz/KW/KWH)	Conzerv / Larsen & Toubro / Secure / AE / Socomac / Neptune /Hager
34.	Fasteners / GI Clamps	Hilti / Fisher / Chilli /OBO
35.	D.W. Corrugated HDPE Pipe (ISI marked)	REX / Dura plast / Zenduct / Gemini(Tripiti )/ Duraline / Keshav Kripa Polyplast (LLP)
36.	Transformer (Oil / Dry type) Upto 250 KVA	Crompton / ABB / Raychem / Schneider / Voltamp / Uttam Bharat / United / Bharat Bijlee/RTS-Jaipur
37.	Transformer (Oil / Dry type) Above 250 KVA	Crompton / ABB / Schneider / Sterling & Wilson / Raychem / Bharat Bijlee /Voltamp
38.	HT Panel / Ring Main Unit	Siemens / ABB / L&T / Schneider / C&S
39.	HT End Termination /Cable Jointing Kit	Reychem / Denson / Cap Seal / Safekei / 3M
40.	ACBs	Siemens (3WL–ETU45B) / L&T (U-Power-OMEGA MTX 4.0) / ABB (Emax)PR122 / Legrand (DMX <sup>3</sup> MP4) / Schneider (MVS Series) / C&S (Winmaster 2/3)
41.	Rubber Mat (MV / HT)	Jyoti / Deep Jyoti / Premier (duly ISI marked)
42.	Capacitors & Reactors / APFC Relay	EPCOS/ L&T / DUCATI / ABB / Siemens / Schneider / Neptune
43.	Cable Glands /lugs	Baliga lighting / Comet / Cosmos / Dowells / Lapp / Gripwell
44.	Perforated Cable Tray	Pilco / Slotco /RMCON/ BEC / Steelways / OBO/ Jindal/ Tata/ Arcellar Mittal
45.	SS Wire mesh cable Tray/Raceways	Legrand / OBO / MK

	<b>Water Supply Pump Sets (General Purpose)</b>	
46.	Mono Submersible/ Submersible pump Set	KSB / CG / Kirloskar / Grundfos / Mather & Platt (Wilo)
47.	DOL / Star Delta Starter	L&T / BCH / Havells / C&S / Siemens / Schneider
48.	Submersible Cable	Finolex / RR kabel / Polycab / Havells / KEI/ Bonton
	<b>False Ceiling</b>	
49.	Mineral Fibre	Armstrong
50.	Gypsum Board	Indian Gypsum/ USG Bord
	<b>Air Conditioning System</b>	
51.	Precision Air-conditioner	Vertiv/ Schneider/Gutoor/Uniflair
52.	Split Air Conditioner	Hitachi/ Daikin/ O-General/ Mitshubshi / Carrier/ Bluestar
53.	Window Type Air Conditioner	Hitachi/ Daikin/ O-General/ Mitshubshi / Carrier/ Bluestar
54.	VRV/VRF	Hitachi/ Daikin/ O-General/ Mitshubshi / Carrier/ Bluestar/
55.	Refrigerant Pipe	OEM or RR/ Rajco/ Maxflow/ Mandev/ Indigo/ Papriwal
56.	CPVC pipe / Drain Pipe	Ashirwad/ Supreme/ Astral/ Prayag/ Duraline/ Finolex/ Rex/ Kisan
57.	Y or T Joints	OEM Make of IDU/ ODU.
	<b>Insulation, Ducting, Grills and Diffusers</b>	
58.	GSS Sheet (For site fabricated duct)	SAIL/ Jindal/ Tata
59.	Aluminum Sheet	Hindalco/ Balco/ Nalco/ Tata/ Aditya Birla
60.	Flexible duct/Company Fabricated Duct	Waves/ Zeco/ Ductofab/ Airflow/ Caryaire/ Atco/ Pioneer
61.	Duct Insulation	Supreme/A- Flex / Armoflex/ K- Flex
62.	Acoustic	Supreme/A- Flex / Armoflex/ K- Flex
63.	Grill	Carryaire/ Air flow/ System Air/ Air Max/ Greenair LLP
64.	Diffuser	Carryaire/ Air flow/ System Air/ Air Max/ Greenair LLP
65.	Louver	Carryaire/ Air flow/ System Air/ Air Max/ Greenair LLP
66.	Fire Damper	Carryaire/ Air flow/ System Air/ Air Max/ Greenair LLP
67.	Actuator	Honeywell/ Belimo
68.	Nitrile Rubber	Armacell/ K-Flex/ Aerocell
69.	Expanded Polystyrene	SHI/ Beardshell/ Styrene Packing
	<b>Central Air Conditioning Plant</b>	
70.	Chiller	CARRIER/ BLUESTAR / YORK/ DAIKIN
71.	Air Handling Unit	Zeco / Edgtech / Crystal/ System air/ Wayes
72.	Primary Water Pump	Armstrong/ Grundfos/ Kirloskar/ Beacon/ Xylem
73.	AHU/ FCU Motor	ABB/ Havells/ Seimens/ Marathon
74.	VFD	Siemens/ Danfoss/ABB
75.	Scrubber	Zeco /Edgetech / Crystal/ System air
76.	Exhaust Fan	Air Flow/ Kruger/ Nicotra/ Greenheck
77.	AHU Blower	Kruger/ Nicotra/ Greenheck/ Glowtech
78.	Inline Fan	Ostberg/ Greenhack/ Sphere/ Caryaire/ Airflow
79.	Air Washer	Zeco /Edgetech / Crystal/ System air
80.	MS Pipe/ GI Pipe	Jindal (Hissar ) / Tata / Sail
81.	Butterfly Valve	Castle / Advance / Zoloto / Belimo / Honeywell
82.	Balancing Valve	Castle / Advance / Zoloto / Belimo / Honeywell
83.	NRV	Castle / Advance / Zoloto / Belimo / Honeywell

84.	Ball Valve	Castle / Advance / Zoloto / Belimo / Honeywell
85.	Pibcv	Belimo/Honeywell/Jhonsons Control /Danfoss
86.	Y / Pot Strainer	Anergy / Sant / Advance / Zoloto / Rapidcool/ Emerald
87.	Bellow	Easyflex
88.	Flow Switch	H Guru / Honeywell / Danfoss/ L&T/ Emerald
89.	Pressure Gauge	H Guru / Honeywell / Danfoss/ L&T/ Emerald
90.	Temperature Gauge	H Guru / Honeywell / Danfoss/ L&T/ Emerald
91.	Expansion Tank	Anergy/ Emerald/ Rapidcool/KD
92.	<b>Paint</b>	Nerolac/ Asian/ Burger

**Note-**

- Any item of make other than above said will be got approved by Engineer-in-charge before brought at site.
- The list above is indicative and all items /samples shall be approved by Engineer-In-Charge before installation at site.

## SCHEDULE OF WORKS

S.No	Item Description	Qty.	Unit	Rate	Amount	Reference
A	<b>Sub Head : AHU WORK</b>					
	<b>CHILLER</b>					
1	<p>Supplying, installing, testing and commissioning of AHRI Certified Air Cooled Screw Chillers comprising of twin rotary screw chilling Machine for (110 TR Actual ) capacity with R- 134A refrigerant and Single semi-hermetic compressor comprise of machine mounted motor with Star delta starter. Cu-Al Air cooled condenser, refrigerant piping and control wiring, first charge of refrigerant &amp; oil and accessories including safety controls mounted in central micro-processor based console panel, sockets, flow switches, sensors, cable termination adopter box with suitable rating of MCB/MCCB/SFU. Refrigerant used as shall be Ozone friendly HFC. vibration isolators shall be provided for the chiller and included in price. Evaporator shall be factory insulated with 19 mm Thick black cloth faced Nitrile Rubber/Elastomeric Foam as per OEM standard. Flow switch shall be provided at evaporator and condenser duly interlocked for safe operation of chiller. Cable terminal box shall be suitable for receiving incoming Aluminium Cabling. Grooved coupling for chiller at inlet &amp; outlet. BMS card shall be included in the price and vendor shall provide open protocol and suitable to connect with Modbus/Bacnet. Motor suitable for 415±10%, 50 cycles, 3 phase AC supply. The Evaporator performance shall be as follows:  Chilled Water Temperature- Inlet-54 °F ( 12.2 Deg C)  Chilled Water Temperature- Outlet-44 °F ( 6.7 Deg C)  Ambient Temp@Design-113 °F  Max Ambient Temp at chiller should work-135 °F  Fouling Factor-0.0005 FPS  COP@AHRI-Min 3.28  IPLV-Min 4.39 kW/kW  NPLV-Min 3.65 kW/kW  The price quoted for supply, installation, testing &amp; commissioning of Rotary Screw Water Chilling Unit shall be inclusive of all duties &amp; taxes, insurance, transportation / shipment cost from works to site, loading / unloading, port clearance charges etc. as required in Indian Rupees. (1W+1S)</p>	2.0	Set	40,36,550.00	80,73,100.00	MR

	<b>CENTRIFUGAL PUMP SET</b>					
2	<p>Supply, installation, testing and commissioning of Vertical Inline chilled water centrifugal pump sets with SS-316 impeller for chilled water recirculation complete with TEFC (IE3) Sq. Cage induction motor with class "F" insulation, base plate, coupling guard, SS Shaft Grade 316, SS impeller, factory fitted mechanical seal, flexible pipe connector at inlet and outlet etc. conforming to technical specification &amp; as per following parameters. The chilled water pumps shall also include the cost of thermal insulation.</p> <p><b>Primary Chilled Water Pumps Set (1W+1S)</b>  Capacity of Nos. Pump LPM = 1000  Pump Head (Mt) = 30.00  Motor HP (Indicative) = 11.0  Pump Efficiency (Min) = 75%</p>	2.0	Set	4,65,500.00	9,31,000.00	MR
	<b>Air Handling Units CHW Type</b>					
3	<p>Supply, Installation, Testing and commissioning of following factory built Horizontal floor mounted chilled water double skin type air handling units made of 46 mm thick panels consisting of pre plasticized G.I. casing of thickness 0.8mm outside layer and 0.8 mm inside layer with polyurethane foam (PUF) insulation factory injected between them by injection moulding machine, fan section complete with floor standing AMCA certified backward curved DIDW centrifugal fan, cooling coil section with aluminium finned copper tubes (tubes thickness not less than 0.5 mm) with hydrophilic coating, filter section with MERV-8 rating HDPE type air prefilters(it shall have minimum 90%efficiency down to 10 microns), limit switch, belt drive package with TEFC drive motor of efficiency class IE3 suitable for 415 ± 10% V, 50Hz, 3 Phase AC supply suitably designed for variable frequency drive applications, drain connections, doubled skinned sandwich type stainless steel (18G) drain pan with PUF insulation having inner sheet of 18 gauge stainless steel and outer sheet of 22 gauge GI sheet , copper header with " Copper to MS adopter", auto purge valve wherever required, necessary vibration isolation arrangement etc. complete as per specification. The AHU should be with thermal break profile. The AHU coil shall be designed for a face velocity of air not exceeding 155m/ min and the air outlet velocity from the blower fan shall not exceed 610m/min and etc as required.</p>					
3.1	13000 CFM X 55 mm St. Pr. X 6 Row CC X 26 Tr X Floor mounted Location- Ground Floor	1.0	Nos.	5,85,984.70	5,85,984.70	MR

3.2	10000 CFM X 50 mm St. Pr. X 6 Row CC X 20 Tr X Floor mounted Location- Ground Floor	1.0	Nos.	5,08,678.45	5,08,678.45	MR
3.3	12500 CFM X 50 mm St. Pr. X 6 Row CC X 25 Tr X Floor mounted Location- 1st Floor	1.0	Nos.	5,85,984.70	5,85,984.70	MR
3.4	12000 CFM X 50 mm St. Pr. X 6 Row CC X 24 Tr X Floor mounted Location- 1st Floor	1.0	Nos.	5,63,374.70	5,63,374.70	MR
3.5	11000 CFM X 50 mm St. Pr. X 6 Row CC X 22 Tr X Floor mounted Location- 2nd Floor	1.0	Nos.	5,19,983.45	5,19,983.45	MR
3.6	8000 CFM X 50 mm St. Pr. X 6 Row CC X 16 Tr X Floor mounted Location- 2nd Floor	1.0	Nos.	4,17,127.90	4,17,127.90	MR
	<b>AIR &amp; DIRT SEPERATOR</b>					
4	Supply, installation, testing and commissioning of centrifugal type Air & dirt separator mild steel construction, unit shall be able to remove free air and micro bubbles as well as remove solid particles upto 10 microns. The unit shall inlet and outlet connections tangential to the vessel shell. The unit shall have an internal stainless steel collector tube with 5/32" (4mm) diameter perforations and 63% open area designed to direct accumulated air to the compression tank on an air control system or an air vent on an air elimination via an NPT vent connection at top of the unit. Unit shall be as per specifications & drawings.					
4.1	125 mm dia	1.0	Nos	2,46,050.00	2,46,050.00	MR
	<b>CHILLED WATER PIPING WITH INSULATION (INDOOR/OUTDOOR)</b>					
5	Supplying, laying/ fixing, testing and commissioning of following nominal sizes of chilled water piping plumbing inside/oitdoor the building ( <b>with necessary clamps, vibration isolators and fittings</b> but excluding valves, strainers, gauges etc.) duly insulated with fire retardant quality expanded polystrene moulded pipe section of density 20 kg/cu.m after a thick coat of cold setting adhesive (CPRX compound) wrapping with 500g polythene faced hessain and finally applying 0.63mm aluminium sheet cladding complete with type3 , grade 1 roofing feltstrip(as per IS:1322 as amended up to date ) at joints repairing of damage to building etc. as per specifications and as required complete in all respect. Note:- The Pipes of sizes 150mm & below shall be M.S. 'C' class as per IS : 1239 and pipes size above 150mm shall be welded black steel pipe heavy class as per IS: 3589, from minimum 6.35mm thick M.S. Sheet for pipes upto 350 mm dia. and from minimum 7mm thick MS sheet for pipes of 400 mm dia and above.					DSR Item No.-

5.1	125 mm dia. (75 mm thick insulation)	52.0	Mtr	4,357.62	2,26,596.43	16.3.7
5.2	100 mm dia. (50 mm thick insulation)	153.0	Mtr	3,724.98	5,69,921.76	16.3.8
5.3	80 mm dia. (50 mm thick insulation)	35.0	Mtr	2,915.11	1,02,028.76	16.3.9
5.4	65 mm dia. (50 mm thick insulation)	55.0	Mtr	2,470.43	1,35,873.65	16.3.10
5.5	50 mm dia. (50 mm thick insulation)	25.0	Mtr	2,059.05	51,476.24	16.3.11
5.6	40 mm dia. (50 mm thick insulation)	10.0	Mtr	1,751.86	17,518.57	16.3.12
	<b>VALVES &amp; STRAINER (INSULATED)</b>					
6	Supply, installation, testing and commissioning of following valves in chilled water line as per specification given in the tender. Valves shall be insulated as per pipe insulation following sizes, complete as required and as per IS & specifications					
6.1	<b>BALANCING VALVE WITH BUILT IN MEASURING FACILITY</b> with Cast Iron body flanged construction, SS-410 Stem, EN-3 Disc and EPDM Sealing Disc Rating PN-16 for chilled / hot water circulation as specified. Valves shall be insulated as per pipe insulation Sizes shall be as follows.					DSR Item No.-
6.1.1	125 mm dia (For Chiller)	2.0	Nos.	28,437.87	56,875.74	16.7.2.3
6.1.2	100 mm dia	2.0	Nos.	21,358.48	42,716.96	16.7.2.4
6.2	<b>BUTTERFLY VALVE (MANUAL)</b> shall be PN-16 rating, Cast Iron to IS 210 Gr. FG 260 Body, Ductile (SG) Iron Disc with Nylon Coated, SS-431 Shaft, EPDM integrally moulded liner with hand lever operated upto 150mm and 200mm and above Gear Operated. Valves shall be insulated as per pipe insulation Sizes shall be as follows.					DSR Item No.-
6.2.1	125 mm dia	11.0	Nos.	7,216.88	79,385.66	16.7.1.3
6.2.2	100 mm dia	4.0	Nos.	7,132.02	28,528.10	16.7.1.4
6.2.3	80 mm dia	1.0	Nos.	5,205.09	5,205.09	16.7.1.5
6.2.4	65 mm dia	10.0	Nos.	4,865.67	48,656.73	16.7.1.6
6.2.5	50 mm dia	2.0	Nos.	3,760.42	7,520.85	16.7.1.8
6.2.6	40 mm dia	1.0	Nos.	3,760.42	3,760.42	16.7.1.8
6.3	<b>Ball valves</b> of brass with strainer PN-16 pressure rating for chilled water/ hot water circulation etc. as required					
6.3.1	25 mm dia	6.0	Nos.	2,800.00	16,800.00	MR
6.3.2	15 mm dia for AHU drain	6.0	Nos.	1,550.00	9,300.00	MR
6.4	<b>NON - RETURN VALVE</b> Cast Iron to IS 210 Gr. FG 260 Body, ASTM A 217 Gr. CA-15 (SS-410) Plates, SS-410 Hinge/Stop Pin, SS-316 Spring(s),					DSR Item No.-

	Buna-N Seal for chilled / hot water circulation. Valves shall be insulated as per pipe insulation Sizes shall be as follows.					
6.4.1	125 mm dia	2.0	Nos.	8,449.94	16,899.89	16.7.3.3
6.5	<b>Y-strainer (Factory Insulated)</b> of Ductile CI Body flanged ends with stainless steel strainer for chilled / hot water circulation. Valves shall be insulated as per pipe insulation Sizes shall be as follows.					DSR Item No.-
6.5.1	125 mm dia	2.0	Nos.	23,548.57	47,097.14	16.7.4.3
6.5.2	65 mm dia	5.0	Nos.	8,550.91	42,754.55	16.7.4.6
6.5.3	50 mm dia	1.0	Nos.	6,328.60	6,328.60	16.7.4.7
7	Providing & fixing in position of the industrial type <b>pressure gauges</b> with gun metal/brass valves of approved make of required size, complete in all respects and as per IS & specifications	18.0	Nos.	1,284.62	23,123.22	16.8
8	Providing & fixing in position the mercury in glass industrial type <b>thermometers</b> , complete as required size, complete in all respects and as per IS & specifications	16.0	Nos.	1,120.29	17,924.58	16.9
	<b>Motorised Butterfly Valves (Factory Insulated)</b>					
9	Supply, installation, testing and commissioning of motorised on / off butterfly valves with modulating motor in return chilled & hot water line of Nos. chiller & Hot Water Generator operated through BMS & of following sizes. Butterfly valve rating shall be PN-16, Cast Iron to IS 210 Gr. FG 260 Body, Ductile (SG) Iron Disc with Nylon Coated, SS-431 Shaft, EPDM integrally moulded liner. Valves shall be insulated as per pipe insulation Sizes shall be as follows.					DSR Item No.-
9.1	125 mm dia (For Chiller)	2.0	Nos.	45,657.84	91,315.69	16.11.3.6
	<b>Pressure Independent Balancing Cum Control Valve</b>					
10	Supply, Installation, testing and commissioning of following sizes electronic, self-balancing, pressure independent type dynamic balancing valve with integrated 2 way modulating control valve in a single body. The actuator shall be capable of accepting upto 10V DC and upto 20 mA electric signal and shall provide similar transduced feedback output to control system. Maximum close off pressure shall not be less than 6 Bar for upto 50 mm valves and 7 Bar for 65 mm & above. Valves should have pressure rating of 25 Bar minimum, complete as required and as per IS & specifications					DSR Item No.-
10.1	50 mm Dia	1.0	Nos.	34,160.68	34,160.68	16.11.4.7
10.2	65 mm Dia	5.0	Nos.	57,810.21	2,89,051.05	16.11.4.5



	<b>Condensate Drain Piping With Insulation</b>					
11	Supply, laying, joining, testing and commissioning of CPVC 4120 SDR 11/SCH40 plastic pipe as per ASTM D- 2846/ASTM F 441 pipeline with necessary slope. The rate quoted shall include for (All fittings shall be heavy duty type SCH80 as per ASTM F439)necessary U-Trap, Unions, Reducer, Coupling, Tee, Reducer tee, Elbow, Male adapter, Female adapter, End cap, Brass couplings, Flange, Gaskets, clamps, Tagging(Acrylic), Adhesives solution(ASTM F-493), Wall bores cutting through walls, 100 density PUF, Metal supports(Clamps, ISMC, ISA), etc. as per dwg to be considered for all sizes of every 1.5 mts distance, complete as required and as per IS & specifications.					
11.1	25 mm dia pipe	25.0	Mtr	317.00	7,925.00	MR
11.2	32 mm dia pipe	15.0	Mtr	391.00	5,865.00	MR
11.3	40 mm dia pipe	50.0	Mtr	456.00	22,800.00	MR
	<b>Auto Air Vent</b>					
12	Supply, Installation, testing and commissioning of auto air vent valve of following sizes and complying with tender specification, complete as required and as per IS & specifications					
12.1	15 mm dia auto air vent valve with Ball valve	10.0	Nos.	1,050.00	10,500.00	MR
	<b>Expansion Tank for Chilled / Hot Water Circuit</b>					
13	Supply, Installation, testing and commissioning of 500 litres capacity Expansion Tank of polypropylene SE quality, located approximately 1 mtr over the topmost level of chilled brine line to connect to return header with no valve. The tank shall have 50mm system connection and 40mm drain and over flow and 40mm quick fill and makeup connection and provision for mounting level switches.	1.0	Nos.	86,450.00	86,450.00	MR
	<b>Duct Flexible Connectors:</b>					
14	Supply, Installation, testing and commissioning of Duct Flexible Connectors made out of Silicon Coated Non Combustible Fabric (Finished Width of 150 mm) suitable to withstand temperature of 280 Deg. C for 1 Hour, complete with fittings, flanges, supports, all accessories as per specifications and any other item required to make the system complete as required and as per IS & specifications	10.0	Sqm	3,950.00	39,500.00	MR
	<b>DUCTING, GRILLS, DIFFUSERS AND INSULATION</b>					
15	Supply, installation, balancing and commissioning of site fabricated GSS sheet metal rectangular/round ducting complete with neoprene rubber					DSR Item No.-

	gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required and as per IS & specifications					
15.1	24 G (Up To 750 mm)	245.0	SMT	1,136.40	2,78,417.46	16.12.2.1
15.2	22 G (751 to 1500 mm)	105.0	SMT	1,320.07	1,38,607.23	16.12.2.2
15.3	20 G (1501 to 2250 mm)	125.0	SMT	1,749.71	2,18,713.61	16.12.2.3
16	Supplying & fixing of powder coated extruded aluminium Supply Air Grills with aluminium volume control dampers complete as required and as per IS & specifications	1.0	SMT	9,779.68	9,779.68	16.15
17	Supplying & fixing of powder coated extruded aluminium Return Air Grills with louvers but without volume control dampers complete as required, complete as required and as per IS & specifications	1.0	SMT	6,347.93	6,347.93	16.16
18	Supplying, fixing testing commissioning of supply air diffusers of powder coated aluminium with aluminium volume control dampers with anti smudge ring & removable core, complete as required and as per IS & specifications	10.0	SMT	13,086.83	1,30,868.34	16.17
19	Supplying, fixing testing commissioning of Return air diffusers of powder coated aluminium without volume control dampers with anti smudge ring & removable core, complete as required and as per IS & specifications	10.0	SMT	8,722.77	87,227.66	16.18
20	Supplying, fixing testing commissioning of Fresh / Exhaust air louvers with bird screen & damper complete as required and as per IS & specifications	1.0	2.00	9,576.00	9,576.00	
21	Supply, installation and testing of multiblade box type Galvanized Sheet Steel construction damper for ducts to be provided with suitable links and quadrants for control of volume of air complete as required and as per IS & specifications	5.0	SMT	7,568.11	37,840.54	16.13
23	Supplying and fixing of acoustic lining of duct with Open Cell Nitrile Rubber density 140-180 Kg/m <sup>3</sup> . Applied by Adhesive, complete as required and conforming to IS standard specification.					
23.1	15 mm	155.0	SMT	1,549.45	2,40,164.75	MR
24	Supplying and fixing of acoustic lining on AHU room Wall and ceiling with Open Cell Nitrile Rubber density 140-180 Kg/m <sup>3</sup> . Applied by Adhesive, Nut bolt/ Gi washer etc. complete as required and as per IS & specifications					
24.1	25 mm	450.0	SMT	2,214.45	9,96,502.50	MR
25	Supply & Installation of Thermal Insulation on Ducts not exposed to sunlight using Closed Cell Class O Nitrile Rubber Elastomeric Insulation of Density 40 - 60 Kg/m <sup>3</sup> , Thermal Conductivity of 0.037 W/mk at 20 Celcius Mean					DSR Item No.-

	Temp. and $\mu \geq 7000$ (without any additional vapour barrier) and with factory laminated aluminium foil of minimum 60 Microns thickness having weight of 193 gsm as per EN ISO 2286-2, tensile strength shall be 90N/15mm as per EN ISO 527-3 with elongation > 10% as per EN ISO 527-3; to be applied on Ducts using manufacturer's recommended Rubber based Adhesive in a blend of Solvents.					
25.1	19 mm on Supply Air Duct	385.0	SMT	809.87	3,11,800.49	16.23.1
25.2	13 mm on Return Air Duct	90.0	SMT	685.35	61,681.41	MR
	<b>FIRE DAMPER &amp; ACTUATOR</b>					
26	Supplying, Fixing, testing and commissioning of fire dampers in supply air duct/main branch and return air path as and where required of required sizes i/c control wiring, the damper shall be motorized and spring return so as to close the damper in the event of power failure automatically and open the same in case of power being restored. The spring return action shall be inbuilt mechanism and not externally mounted. The damper shall also be closed in the event of fire signal complete as required and as per specifications.					DSR Item No.-
26.1	Fire Damper	10.0	SMT	11,448.83	1,14,488.32	16.20.1
26.2	Actuator	15.0	Nos.	10,685.15	1,60,277.20	16.20.2
<b>B</b>	<b>Sub Head : VRV &amp; NON - VRV System ( DX system)</b>					
	<b>OUTDOOR UNIT</b>					
27	Supply Installation, Testing & Commissioning of modular type Variable Refrigerant Flow/Variable Refrigerant Volume air cooled Outdoor units suitable for cooling and heating, having all hermetically sealed inverter type Scroll Compressor(s), minimum two compressors for above 16 HP modules, microprocessor based Controller, top discharge type condensing unit(s), with R 410 A Refrigerant, vibration isolators, with suitable foundation etc. complete as required. The unit shall deliver the rated capacity at AHRI Conditions and work even at 50°C ambient temperature without tripping. The unit shall be suitable to work on 400V +/- 10%, 3 Phase, 50Hz AC power supply. The unit shall be filled with first charge of the refrigerant and ready for use as required. The COP at AHRI conditions shall not be less than 3.1 and IEER not less than 6.5					DSR VRV/VRF Item No.
27.1	28 HP capacity of Outdoor Unit	28.0	HP	17,631.35	4,93,677.84	1
	<b>INDOOR UNIT</b>					
28	Supply, installation, testing and commissioning of following capacity unit					

	high/ Medium static pressure VRF/VRV ceiling mounted ductable type Indoor unit equipped with washable synthetic media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX copper coil, electronic expansion valve, corded remote control, outer cabinet, vibration isolators, drain pan, other necessary supports etc., suitable for operation on single phase AC supply 230 V $\pm$ 10%, 50 Hz complete as required. The unit shall have automatic force shut down provision in case of fire on receiving signal from BMS System. The cooling capacity of indoor unit will be at air inlet conditions of 27 Degree C DB and 19 Degree C WB temperature.					
28.1	Capacity 4.5 Tr /1800 CFM, GF-Conference (Left Side) & FF- Conference (Left Side)	2.0	Nos	92,121.26	1,84,242.52	4.15
28.2	Capacity 3.5 Tr /1200 CFM, SF- Meeting room	1.0	Nos	51,085.27	51,085.27	4.17
	<b>AHU &amp; VRV / VRF Outdoor Unit Integration Kit:</b>					
29	Supply Installation, Testing & Commissioning of the kit comprising of all items in required quantities to complete the system, as listed below, but not limited to the following: AHU Control Kit(s), AHU EEV (Electronic Expansion Valve) Kit(s), Thermistors for Pipes & Room (complete with field wiring), Dry Contact PCB(s), Capacity Setting PCB(s), Control Wiring between AHU Control Kit(s) and AHU EEV Kit(s), Power & Control Wiring between AHU Starter Panel(s); AHU Control Kit(s) & AHU EEV Kit(s), Interlocking (complete with wiring) of AHU starter(s) with Condensing Unit(s), complete as required and as per IS & specifications.					
29.1	4000 CFM X 25-30 SP X 4/6 RD ( as per coil selection) X 10.5 TR Location-Ground Floor Lobby	1.0	Nos	85,000.00	85,000.00	MR
30	Supply Installation, Testing and commissioning of Imported fittings (Ref Net) Y-joints etc. complete as required and as per IS & specifications					
30.1	Y joints for IDU	3.0	Nos	8,500.00	25,500.00	MR
30.2	Y joints for ODU	1.0	Nos	14,000.00	14,000.00	MR
31	Supply Installation, Testing and commissioning Cordless/ Corded Remotes controllers for Cast, complete as required and as per IS & specifications	4.0	Nos	4500.00	18,000.00	MR
32	Supply, installation, testing and commissioning of factory fabricated Double Skinned, DX coil type, ceiling suspended Air- handling unit, fabricated out of extruded aluminium section consisting with 0.6mm pre-coated Galvanised steel sheet outside & 0.6 mm plain galvanised steel sheet					

	inside with blower, blower section and Blower shall be DIDW Forward blade and blower motor TEFC type suitable (IE-3) for operation on 415 volts $\pm$ 10%, 50 Hz $\pm$ 5% AC supply, 4/6 ( as per coil selection ) Row cooling coil made of Aluminium finned Copper tube ( thickness 0.50 mm) with coil section, pre - filter section with non woven synthetic media of 10 micron particle size with an efficiency of 90% (MERV 8), polished stainless steel drain pan made out of 18 G sheet duly insulated complete with motor and belt drive package etc. The AHU panels shall be insulated with 25 mm thick & 40 Kg/m <sup>3</sup> density PU foam. The motor & blower assembly shall be mounted on Aluminium extruded section only. The complete AHU shall conform to standard specification. The face velocity across DX cooling coil, filters should not exceed 152meters per minute.					
32.1	4000 CFM X 25-30 SP X 4/6 RD ( as per coil selection) X 10.5 TR Location- Ground Floor Lobby	1.0	Nos	2,30,000.00	2,30,000.00	MR
33	Supply, installation, testing and commissioning of Non VRV Ductable Unit of Capacity 4.0 Tr /1600 CFM, complete as required and as per IS & specifications. Location = GF-Digital Assement Center Scanner Room, FF-Conference Room (Right Side)	2.0	Nos	1,03,500.00	2,07,000.00	MR
34	Supply, installation, testing and commissioning of Non VRV 4 Way Cassette Unit of Capacity 4.0 Tr , 5 star rating as per BEE, complete as required and as per IS & specifications. Location = FF- International Student Cell	1.0	Nos	75,000.00	75,000.00	MR
35	Supply, installation, testing and commissioning of Non VRV 4 Way Cassette Unit of Capacity 2.0 Tr , 5 star as per BEE, complete as required and as per IS & specifications. Location = FF- Rajbhasha Cell	1.0	Nos	70,000.00	70,000.00	MR
	<b>COPPER REFRIGERANT PIPING</b>					
36	Supply, Installation, testing and commissioning including vaccumiasation and Nitrogen testing of following nominal sizes of soft/hard drawn copper refrigerant piping for VRV/VRF system, complete with fittings, with suitable adjustable ring type hanger supports, jointing/brazing including accessories, insulated with XPLE Class-O tubular insulation/with Class-O closed cell elastomeric nitrile rubber tubular sleeves sections of specified thickness as given below for Suction and Liquid lines, all accessories as per specifications etc. as required :					DSR VRV/VRF Item No.
36.1	6.4 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 13 mm thick insulation	45.0	Mtr	263.15	11,841.95	5.1
36.2	9.5 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 13 mm thick insulation	55.0	Mtr	355.53	19,553.99	5.2

36.3	12.7 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 13 mm thick insulation	25.0	Mtr	500.53	12,513.27	5.3
36.4	15.86 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm with 13 mm thick insulation	40.0	Mtr	631.57	25,262.83	5.4
36.5	19 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	28.0	Mtr	759.39	21,262.88	5.5
36.6	22.2 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	35.0	Mtr	929.10	32,518.38	5.6
36.7	25.4 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	15.0	Mtr	1,097.73	16,465.95	5.7
36.8	28.58 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	13.0	Mtr	1,190.10	15,471.34	5.8
36.9	31.8 mm dia (OD) (Hard drawn) with tube thickness 1.62 mm with 19 mm thick insulation	5.0	Mtr	1,256.70	6,283.49	5.9
36.10	34.9 mm dia (OD) (Hard drawn) with tube thickness 1.62 mm with 19 mm thick insulation	10.0	Mtr	1,321.14	13,211.43	5.10
<b>C</b>	<b>Electrical Work</b>					
	<b>Main AC Panel</b>					
37	Supply, installation, testing & commissioning of weather proof IP-55/42 protection Main panel board cubical compartmentalised, Floor/wall mounted made of 2.0 mm thick steel sheet duly painted complete with voltmeter, ammeter, indicating lights for selector switch, incoming/outgoing feeders, NO/NC contactors, CTS contactors complete as per specifications and requirement. 1 No. 400 Amps 4 Pole MCCB 1 set 450 Amps TPN Aluminium conductor bus bar duly sleeved. 2 Nos 250 Amps TPN MCCB outgoing for 110.0 TR (Actual) Air Cooled Chillers. 2 Nos. 40 Amps TPN MCB outgoing along with 2 Nos. Star delta starter for chilled water pumps motor. (7.5 Kw) 1 No. 250 Amps TPN MCCB for 1 No. Air Cooled Chiller. (Spare) 1 No. 40 Amps TPN MCB for 1 No. Primary Pump. (Spare)	1.0	Set	2,39,400.00	2,39,400.00	MR
	<b>Electrical Sub Panel for AHU</b>					
38	Supply, installation, testing & commissioning of starter panel weather proof IP-42 board cubical compartmentalised, wall mounted made of 2.0 mm thick steel sheet duly painted complete with voltmeter, ammeter, indicating lights					

	for selector switch, incoming/outgoing feeders CTS contactors, NO/NC contacts on all outgoing with Remote control switch option with by pass system and space for AHU Variable frequency drive complete as per specifications and required.					
38.1	2.2 KW	1.0	Nos.	43,890.00	43,890.00	MR
38.2	5.5 KW	1.0	Nos.	43,890.00	43,890.00	MR
38.3	7.5 KW	4.0	Nos.	54,530.00	2,18,120.00	MR
38.4	11.0 KW	1.0	Nos.	57,190.00	57,190.00	MR
39	Supply, installation, testing and commissioning of following variable frequency drive with IP 20 rated VFD ,mains disconnect switch, C1/C2 compliant, Four PID controller, alpha numeric graphical display with inbuilt energy meter, ammeter, voltmeter etc., Banet over IP/ Banet over MSTP communication protocol, etc. complete as required. The VFD shall be provided with following minimum number of IOs: AI-2, AO-2, DI-6, DO-3					
39.1	2.2 KW	1.0	Nos.	38,570.00	38,570.00	MR
39.2	5.5 KW	1.0	Nos.	46,550.00	46,550.00	MR
39.3	7.5 KW	4.0	Nos.	73,150.00	2,92,600.00	MR
39.4	11.0 KW	1.0	Nos.	86,450.00	86,450.00	MR
40	Supply and installation of 63 Amp, 4P, 300mA weather proof RCBO for outdoor units, complete as required and as per IS & specifications	2.0	Nos	14,500.00	29,000.00	MR
41	Supply and installation of 32 Amp, 4P, 300mA weather proof MCB for outdoor units, complete as required and as per IS & specifications	3.0	Nos	11,500.00	34,500.00	MR
42	Supply and installation of 16 Amp, 4P, 300mA weather proof MCB for outdoor units, complete as required and as per IS & specifications	2.0	Nos	9,500.00	19,000.00	MR
	<b>Power &amp; Control Cabling</b>					
43	Supply, laying, testing and commissioning of power and control cabling as per specification given in the tender. Power cabling of XLPE insulated Aluminium conductor armoured cables of 1.1 KV Grade including cable end termination with brass compression glands & aluminium lugs etc as per specification.					
43.1	<b>For Chiller (85 Kw Nos.)</b>					
	2 x 3.5C x 150 Sq. mm (Rate For Single Run)	50.0	Mtr	2,255.02	1,12,750.75	MR
43.2	<b>For CHW Pump, (11 HP Nos.)</b>					
	2 x 3C x 6 Sq. mm (Rate For Single Run)	40.0	Mtr	192.85	7,714.00	MR
43.3	<b>For Motor Up to 3.73 Kw</b>					

	1 x 3C x 4 Sq. mm	80.0	Mtr	172.90	13,832.00	MR
43.4	<b>For Motor of 5.5 Kw</b>					
	1 x 3C x 6 Sq. mm	10.0	Mtr	192.85	1,928.50	MR
43.5	<b>For Motor of 7.5 to 11 Kw</b>					
	2 x 3C x 6 Sq. mm	50.0	Mtr	192.85	9,642.50	MR
44.00	<b>Control cabling (PVC insulated Copper conductor of 1.1 KV Grade Flexible cable)</b>					
44.1	3C x 1.5 Sq. mm	140.0	Mtr	142.31	19,923.40	MR
44.2	4C x 1.5 Sq. mm	50.0	Mtr	179.55	8,977.50	MR
44.3	5C x 1.5 Sq. mm	250.0	Mtr	204.82	51,205.00	MR
45	Supply, laying, testing and commissioning of PVC insulated and PVC sheathed, shielded, Copper Conductor of 1.1 KV grade in PVC conduit, as per Standard specification including end termination as required.					
45.1	3C x 1.5 Sq. mm	120.0	Mtr	188.86	22,663.20	MR
46	<b>Earthing Strip / GI Wires</b>					DSR Item No.
46.1	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	40.0	Mtr	262.08	10,483.22	5.15
46.2	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	160.0	Mtr	75.19	12,029.92	5.16
	<b>Hot Dipped Galvanised Iron Cable Tray</b>					
47	Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray (Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with G.I. suspenders including G.I. bolts & nuts, etc. as required.					DSR Item No.
47.1	150 mm wide x 50 mm depth x 1.6 mm thickness.	100.0	Mtr	769.06	76,905.56	4.6.2
47.2	300 mm wide x 50 mm depth x 1.6 mm thickness.	50.0	Mtr	1,034.36	51,717.92	4.6.4
	<b>FALSE CEILING WORK</b>					
48	Design, Supply & fixing mineral fibre false ceiling tiles at all heights of size 595X595mm of approved texture, design and pattern. The tiles should have Humidity Resistance (RH) of 99%, Light Reflectance > 85%, Thermal conductivity k = 0.052 - 0.057 w/m K, Fire Performance as per (BS 476 pt - 6 & 7) in true horizontal level suspended on interlocking T-Grid of hot dipped all round galvanized iron section of 0.33 mm thick (galvanized 120 gsm) comprising of main T runners of 15x32 mm of length 3000 mm, cross T of					DSR Civil item



	size 15x32mm of length 1200 mm and secondary intermediate cross T of size 15x32 mm of length 600 mm to form grid module of size 600x600 mm suspended from ceiling using galvanized mild steel item (galvanised@80gsm) 50 mm long 8mm outer diameter M-6 dash fasteners, 6 mm diameter fully threaded hanger rod up to 1000 mm length and L-shape level adjuster of size 85x25x2 mm, spaced at 1200 mm centre to centre along main 'T'. The system should rest on periphery walls /partitions with the help of GI perimeter wall angle of size 24x24X3000 mm made of 0.40 mm thick sheet, to be fixed to the wall with help of plastic rawl plug at 450 mm centre to centre & 40 mm long dry wall S.S. screws. The exposed bottom portion of all T-sections used in false ceiling support system shall be pre-painted with polyester baked paint, for all heights. The work shall be carried out as per specifications, drawings and as per directions of the engineer-in-charge.					
48.1	With 20 mm thick beveled tegular mineral fibre false ceiling tile (NRC 0.7)	450.00	Sq.m.	2537.56	11,41,902.56	26.27.2
49	Design, Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's					DSR Civil item

	specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with:					
49.1	12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095-(Part I) :2011 (Board with BIS certification marks)	450.00	Sq.m.	1230.86	5,53,889.20	12.45.1
50	Distempering with 1st quality acrylic distemper (Ready mix) having VOC content less than 50 grams/ litre of approved brand and manufacture to give an even shade :					
50.1	Old work (one or more coats)	450.00	Sq.m.	61.01	27,454.00	
51	Operation of HVAC Plant installed as per above work with one skilled operator on daily basis during office hours for defect liability period of one year to be commenced from the date of commissioning of Plant (1 job = 3 months)	4	Job	93069.65	3,72,278.60	MR
52	Supply Installation, Testing & Commissioning of 30-50W. 2*2 Size Panel LED cool Day light suitable for single phase, 220-240 V, 50Hz, AC Supply including drop-down wiring from ceiling points with minimum 02 years warranty as per IS & directions of EIC.	60	Each	2000.00	1,20,000.00	MR
53	Dismantling, reinstallation, testing and recommissioning of fire detectors, heat detectors, smoke detectors etc from roof ceiling to false ceiling including necessary wiring complete in all respects as per directions of EIC.	1	job	30000.00	30,000.00	MR
	<b>Net Amount of Item 1 to 53 (incl. GST)</b>				<b>2,27,99,786.35</b>	
	<b>Say (in Rs.)</b>				<b>2,28,00,000.00</b>	

**Note:**

- a) DSR Item rates including Cost Index and GST Factor.
- b) Non-DSR Item rates are based on Market rates.