

Notice Inviting Tender

The Registrar, Central University of Rajasthan, NH-8, Bandarsindri, Kishangarh-305817 invites sealed **Item Rate Tender** from the contractor of CPWD, MES, BRO, State PWD or Public sector undertakings set up by the central or state government registered in appropriate class or manufacturer/ authorized dealers **for following work:**

S. No.	Name of Work	NIT No.	Estimated Cost	Earnest money	Duration of contract	Time & Date of submission of Bid	Time & Date of Opening of Technical Bid
1	Supply, Installation, Testing and Commissioning of Cassette Type Air Conditioners at NAAC Conference Room, Admin Building, Central University of Rajasthan	CURAJ/R/F.138/2022/1263 dated 07.07.2022	Rs. 6,75,000/-	Rs. 13,500/-	02 months	21.07.2022 at 02.00 PM	21.07.2022 at 03.00 PM

The tender forms and other details can be downloaded from the University website www.curaj.ac.in and CPP portal free of cost.

**Registrar
Central University of Rajasthan**

INDEX

S. No.	Section	Description	Page No.
1.	A	Notice Inviting Tender	1
3.	B	Information and Instruction for Bidders	3-4
4.	C	Detailed Notice Inviting Tender	5-11
5.	D	Form of Agreement & Integrity Pact	12-17
6.	E	Special Conditions of Contract	18-23
7.	F	Scope of Work & Technical Specifications	24-28
8.	G	Equipment Data Sheet	29
9.	H	Annexure I to VI to NIT	30-34
10.	I	List of Preferred Makes	35-40
10.	I	BOQ with Schedule of Rates	Attached with Financial Bid

SECTION-B
INFORMATION AND INSTRUCTIONS FOR BIDDERS

The Registrar, Central University of Rajasthan, NH-8, Bandarsindri, Kishangarh-305817 invites sealed **Item Rate Tender** from the contractor of CPWD, MES, BRO, State PWD or Public sector undertakings set up by the central or state government registered in appropriate class or manufacturer/ authorized dealers **for following work:**

S. No.	Name of Work & location	NIT No.	Estimated Cost put to tender	Earnest money	Time allowed for execution of work	Last date & time of submission of tender	Time & Date of Opening of Technical Bid
1	2	3	4	5	6	7	8
1	Supply, Installation, Testing and Commissioning of Cassette Type Air Conditioners at NAAC Conference Room, Admin Building, Central University of Rajasthan	CURAJ/R/F.138/2022/1269 dated 07.07.2022	Rs. 6,75,000/-	Rs. 13,500/-	02 months	21.07.2022 at 02.00 PM	21.07.2022 at 03.00 PM

1. 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.
2. The original manufacturer has to submit the upto date valid registration certificate in make of which product is quoted or authorized dealer has to submit the dealership letter from their manufacturer whose product is quoted, which valid up to date.
3. The intending bidder must read the terms and conditions 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 shall form part of bid document.
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 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 and [CPP portal](#) free of cost.

5. The bidder shall quote his rates keeping in mind the specifications, terms and conditions, additional / particular and special conditions etc. and nothing shall be payable extra whatsoever, unless otherwise specified.
6. The bidder must ensure to quote rate of each item. 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).
7. Earnest Money Deposit 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.
8. The Contractor whose tender is accepted will be required to furnish performance guarantee of 5% (Five Percent) of the tendered amount within 10 days of issue of letter of award. This guarantee shall be in the form banker’s cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay order of any scheduled bank or Government Securities or Fixed Deposit Receipt 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 10 days from date of issue of letter of acceptance, including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor.
9. 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.**
10. 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.

SECTION-C
DETAILED NOTICE INVITING TENDER

The Registrar, Central University of Rajasthan, NH-8, Bandarsindri, Kishangarh-305817 invites sealed Item Rate Tender from the contractor of CPWD, MES, BRO, State PWD or Public sector undertakings set up by the central or state government registered in appropriate class or manufacturer/ authorized dealers for following work:

1. **Name of Work:** Supply, Installation, Testing and Commissioning of Cassette Type Air Conditioners at NAAC Conference Room, Admin Building, Central University of Rajasthan.

1.1 The work is estimated to cost Rs. 6,75,000/- This estimate, however, is given merely as a rough guide.

2. **Minimum Eligibility Criteria**

2.1 Intending bidder is eligible to submit the bid provided he has definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works as defined here under and of magnitude specified below: -

Experience of having successfully completed similar works during last 7 years ending last day of month previous to the one which application are invited should be either of the following:-

- a) Three similar completed works costing not less than 40% of estimated cost, for each work.
- b) Two similar completed works costing not less than 60% of estimated cost, for each work.
- c) One similar completed works costing not less than 80% of estimated cost, for each work.

(Documentary evidence to substantiate above fact must be submitted along with Annexure-I with technical bid).

Similar Nature of works means “Supply, Installation, Testing and Commissioning of Air Conditioners”.

2.2 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 manufacturer whose product is quoted, which valid up to date.

Or The original manufacturer has to submit the upto date valid registration certificate in make of which product is quoted or authorized dealer has to submit the dealership letter from their manufacturer whose product is quoted, which valid up to date.

2.3 The bidder should have had **average annual financial gross turnover not less than Rs. 6.75 lakhs** on works during the last three financial years. Attested copy of audited balance sheets by chartered accountant along with audit report for the completed last three consecutive financial years should be submitted along with the bid document.

However, in support of FY 21-22, an attested and signed copy of provisional balance sheet will be acceptable. Year in which no turnover is shown would also be considered

for working out the average.(Annexure-II)

- 2.4 The bidder should have positive net worth and should not have incurred loss in more than two years during last five years ending 31st March 2020, duly certified by Chartered Accountant should be submitted along with the bid document. (Annexure-II)
3. 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. (Annexure-III)
5. 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-IV)
6. **Preparation & Submission of bids :**
- 6.1 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.
- 6.2 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 above. 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.
7. **Earnest Money Deposit:** The bidder shall be required to submit the Earnest Money Deposit (EMD) for an amount of Rs. 13,500/- (Rupees Fifty four 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. The EMD of the successful bidder shall be become part of performance Guarantee and for unsuccessful bidder(s) it would be returned after award of the contract. Bid(s) received without EMD will be rejected.
Note: The firms who are registered with Medium Small and Micro Enterprise Management (MSME)/Small Scale Industries (SSI) are exempted to submit the EMD (copy of registration must be provided along with technical bid).
8. **Performance Guarantee:**
- The Contractor whose tender is accepted will be required to furnish performance guarantee of 3% (Three Percent) of the tender accepted amount within 10 days of issue of letter of award. This guarantee shall be in the form Demand Draft of any scheduled bank/Pay order of any scheduled bank or Government Securities or Fixed Deposit Receipt or Guarantee Bonds of any Scheduled bank or the State Bank of India in accordance with the prescribed form favoring Central University of Rajasthan payable at Bandarsindri/ Kishangarh, District-Ajmer, Rajasthan.

- The performance Guarantee shall be valid upto the stipulated completion period of work plus 90 days beyond that.
- In case the contractor fails to deposit the said performance guarantee within the 10 days from date of issue of letter of acceptance/work award, including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor and the said performance guarantee may be deducted from the bill.
- This EMD/Performance guarantee shall be forfeited if he/they fails to comply with any of the conditions of the contract. No interest shall be paid on the EMD/Performance guarantee.

9.. **Security Deposit:**

- 2.5% (Five Percent) of the tender accepted amount shall be deducted from the bill.
- 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. **Liquidity Damage:**

0.5% per week of delay subject to maximum of 10% of contract value.

11. **Payment Clause:**

Payment will be made as under duly certified by the Engineer-In-Charge or authorized representative of the University, as below :

- 60% of accepted tender amount towards supply of materials at site.
- 20% of accepted tender amount towards installation.
- 20% of accepted tender amount towards successful commissioning and handing over with all test reports to Engineer-In-Charge of CURaj.

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.

12. **Warranties:**

The plant (complete Air Conditioning system) and associated accessories 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. Any manufacturing defect found during this period shall be repaired/replaced by the supplier free of charge as per terms and conditions embodied in the tender papers and agreement executed with CURaj.

13. The bid submitted shall also become/considered invalid if a bidder quotes nil rates against any or all item in the tender.

14. 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.
15. Before tendering, the bidder shall inspect the site to fully acquaint himself about the conditions in regard to accessibility of site, nature and extent of ground working conditions of site and movement of labour etc. required for the satisfactory execution of the work contract. No claim whatsoever on such accounts shall be entertained by the University in any circumstances after award of tender.
16. 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.
17. The authorized person of the bidding firm/ contractor must put his/her signature on all the pages of the tender documents invariably in having accepted all the terms and conditions in respect of this tender work.
18. 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.
19. 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 bidder shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Electricity will be provided by the University free of cost. 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.

20. 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.
21. Canvassing whether directly or indirectly, in connection with tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.
22. The University reserves the right of accepting the whole or any part of the tender and the bidder shall be bound to perform the same at the rate quoted.
23. Agreement shall be drawn with the successful bidder on prescribed Tender Form. The bidder shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
24. The time allowed for carrying out the work will be **02 months** from the date of award of work.
25. The contractor(s) should also read the General conditions of Contract for CPWD works 2014, which will be a part of the agreement with amendments upto the date of receipt of tenders including the special conditions and particular specifications etc.
26. The Specifications to be followed for execution of work: CPWD General specifications for electrical works Part-I (Internal) 2013 & HVAC-2017, GCC as amended upto date and additional conditions Specifications.
27. **Documents to be enclosed with Technical bid:**
 - i Earnest Money Deposit (EMD) of Rs. 13,500/- drawn in favor of Central University of Rajasthan.
 - ii Copy of GST Registration Certificate.
 - iii Copy of PAN card.
 - iv Copy of Experience/work completion certificates from the clients regarding the quality and duration of services rendered during last seven years as described above (Annexure-I)
 - v Copy of work orders from the client regarding the work awarded during last Seven years. (Annexure-I)
 - vi Copy of registration certificate in appropriate class of CPWD, MES, BRO, State PWD or Public sector undertakings set up by the central or state government along with authorization letter from respective manufacturer or registration certificate/letter with respective make for original equipment manufacturer/authorized service agent, which should be valid upto date.

- vii Copy of audited balance sheets of last three financial years.(Annexure-II)
- viii Copy of document showing net-worth certified by CA.(Annexure-II)
- ix Copy of work orders of on-going work at other sites. (Annexure-IV)
- x A self-certificate showing the track record of contracting firm/Contractor on the non-judicial stamp paper. (Annexure-V)

Note:

1. **Tenders received without EMD will not be accepted.**
 2. 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.
28. **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.
29. This Notice Inviting Bid shall form a part of the contract document. The successful bidder/contractor, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:-
- a) The Notice Inviting Bid, all the documents including additional or special conditions, specifications and drawings, if any, forming part of the bid as uploaded online at the time of invitation of bid and rate quoted at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
 - b) Tender Form
 - c) Form of Agreement
 - d) Integrity Pact.
30. The tender documents can be seen/ downloaded from the University website www.curaj.ac.in & CPP Portal and all future Corrigendum/Corrigenda will be uploaded on our website.
31. Before submitting the tender, please go through complete tender document and terms and conditions on which the work will be awarded and shall be executed by the successful bidder.
32. Any dispute unless resolved amicable shall be settled by a court of law having jurisdiction over Jaipur/Ajmer.

TENDER FORM

I/Wedo hereby submit the tender to execute works of the under mentioned description and in accordance with the conditions noted below in consideration of payment being made for the quantity of work actually executed at the respective rates specified in the Schedule hereto.

“Supply, Installation, Testing and Commissioning of Cassette Type Air Conditioners at NAAC Conference Room, Admin Building, Central University of Rajasthan”

I/We hereby distinctly and expressly declare and acknowledge that before the submission of my/our tender I/we have carefully followed the instructions in the Tender notice and have read the specifications. I/we have visited site and the location where the work is to be executed and thoroughly understand the intents and requirements, agreements, stipulations and restrictions contained in the contract and in the said specifications and distinctly agree that I/we will not hereafter make any claims or demand upon M/s Central University of Rajasthan, Bandarsindri, Kishangarh, Ajmer based upon or arising out of any alleged misunderstanding or mistake on my/our part of the said requirements, agreements, stipulations, instructions and conditions.

I/We enclose earnest money deposit & other required documents for technical evaluation as detailed in this NIT.

I/We agree to keep the Tender open for acceptance for 90 (Ninety) days from the date of submission and not make any alterations in terms and conditions.

After acceptance of the tender if I/we fail to commence work as provided in the conditions I/We agree that M/s Central University of Rajasthan, Bandarsindri, Kishangarh, Ajmer shall without prejudice to any of their right be at liberty to retain the earnest money absolutely.

.....

Authorized signatory on behalf of:

.....

Date:

Witness:

Date:

Address:

.....

SECTION-D
FORM OF AGREEMENT

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

Agreement No: _____

Dated: _____

**CONTRACT FOR SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF
CASSETTE TYPE AIR CONDITIONERS AT NAAC CONFERENCE ROOM, ADMIN
BUILDING, CENTRAL UNIVERSITY OF RAJASTHAN, DISTRICT- AJMER**

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. Supply, Installation, Testing and Commissioning of Cassette Type Air Conditioners at NAAC Conference Room, Admin Building, Central University of Rajasthan and has by Letter of acceptance/awarddatedaccepted 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.

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 thisday of20.....

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 :

SECTION-E
SPECIAL CONDITIONS OF THE CONTRACT

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:- Supply, Installation, Testing and Commissioning of Cassette Type Air Conditioners at NAAC Conference Room, Admin Building, Central University of Rajasthan.

The contractor is advised to visit the site of work i.e. “Campus 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 special conditions shall apply. However, nothing extra shall be paid on account of these technical specifications, special conditions and T&C of NIT document as the same are to be read along with schedule of quantities for the work.
2. **Assembly and Inspection:**
 - Assembly of all parts shall be made to ensure that the parts are properly fitted to minimize erection problems. The owners or their representative reserve the right to inspect any machinery, material and equipment (herein after collectively called "apparatus") finished or used by the contractor under this contract and may reject which is defective in workmanship or design or otherwise unsuitable for the use and purpose intended or which is not in accordance with the intent of this contract. The Contractor shall on demand by the owners or their representatives remedy / replace at the contractor expenses any such defective or unsuitable apparatus.
 - The owner or their representative shall at all times have access to all parts of shop where apparatus is being manufactured and also shall be provided with all reasonable inspection facilities by the contractor and his sub suppliers / contractors.
 - All apparatus should be accompanied with QAP Certificates of respective Manufacturers except for site-fabricated items.
3. On the completion of the work the contractor shall furnish 3 (three) sets of the following documents and drawings.
 - Comprehensive Operation and Maintenance Manuals.
 - As built drawings duly approved.
 - Test Certificates as applicable.
 - Equipment warranties.
 - Signed copies of Testing and Commissioning reports.
4. **Material Testing:**

The owners or their representative shall have the right to get any materials of work to be tested by an independent agency at contractor's expense in order to prove the soundness and adequacy.
5. **Installation**

The Contractor shall carry out the complete installation, which shall include for

transportation of materials from his site store to the site of work. All work shall commence on previously prepared mounting / foundation / supporting hangers / supports. At no time the actual works shall precede the support work. The Contractor shall make his own arrangement to off load equipment/ material received at site.

6. Testing & commissioning

All routine and type tests shall be carried out at the works of the contractor or the manufacturers of the components. The Engineer-In-Charge or his representative shall be free to witness any or all tests if he so desires.

On the completion of the installation, the contractor shall arrange to carry out various initial tests as detailed below, in the presence of and to the complete satisfaction of the Engineer-In-Charge or their representatives. Any defects or shortcomings found during the tests shall be speedily rectified or made good by the contractor at his own expenses. The final test reports shall be submitted to the Engineer-In-Charge or his representative.

The initial tests shall include but not be limited to the following:

- A: Pressure testing of water conveying and refrigerant lines
- B: Pre commissioning checks of all equipment and the installation prior to any equipment start.
- C: Flushing and chemical cleaning of pipelines.
- D: Waterbalancing
- E: Airbalancing
- F: Performance testing of equipment installed.
- G: Control checks
- H: Endurance Test (72Hrs)
- I: Room conditions

On the satisfactory completion of all 'initial' tests the plant shall be deemed to be commissioned.

7. The Contractor shall provide all necessary tools, calibrated instruments, gauges, flow meter, orifice meter/ manometers, Tong testers, velometer, anemometer/anemotherm, pitot tubes, tachometer, etc. as may be required for conducting the various tests. All instruments shall accompany a valid calibration certificate. He shall also provide necessary lubricants and the required personnel for the tests. However, the CURaj shall provide water and power for the tests.

8. Rejection of Defective Plant

- If on test, any portion of the plant, equipment or components are found to be defective or not fulfilling the intent or the meaning of the specifications, the same shall be replaced or repaired to the entire satisfaction of the owner or his representative.
- If the contractor fails to rectify the defect or damage within a reasonable period of time the owner or his representative may fix a date on or by which the defect or damage is to be rectified, and give the contractor reasonable notice of such date. If the contractor fails to remedy the defect or damage by such date, the owners or their representative, at their sole discretion, shall carry out the work themselves or

by others, in a reasonable manner and at the Contractor's risk and recover the costs so incurred from the contractor.

- If the defect or damage is such that the owners have been deprived substantially the benefit of the works, or parts of the works, they reserve the right to terminate the contract in respect of such parts of the works. The owners then shall be entitled to recover all sums paid for such parts of the works together with the cost of dismantling the same, clearing the site and returning Plant and Materials to the Contractor, or otherwise disposing of them in accordance with Contractor's instructions.
- The owners reserve the right to operate all the equipment and complete system whether or not the plant is taken over after the initial test and commissioning. Any defects found during the initial or running tests shall be removed within a suitable period of time as decided upon by the owners or their representative.

9. Maintenance of the Plant and Training of Personnel

The contractor shall arrange to provide, at no extra cost, necessary personnel and material to carry out all special maintenance of the plant as required regularly for a period of twelve months from the date of commissioning.

10. Machinery for erection

- 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.
- No T & P shall be issued by the Department and nothing extra shall be paid on account of this.

11. Defects Liability

All equipment and the entire installation shall be guaranteed against defective materials and workmanship for a period of 12 months reckoned after the plant is commissioned and handed over with the requisite documentation. In case the testing of plant is delayed for any reason, beyond 6 months the defects liability shall extend for a minimum period of 6 months from the date the test readings are accepted. During the defects liability period the contractor shall rectify, repair or replace such defective parts and components free of cost except those which are to be replaced due to normal wear and tear.

12. Completeness of the Plant

The contractor shall provide all the required materials, equipment, ancillary items etc., to install and commission a complete and satisfactory air conditioning plant and systems capable of fulfilling the intent and purpose of the contract whether or not each and every item is mentioned in the specifications and/ or drawings. Any shortcoming noticed at any stage shall be made good at no extra cost.

13. Quantities set in the schedule of quantities are the estimated quantities of the works but they are not to be taken as actual and correct quantities of the work to be executed by the contractor in fulfilment of his obligations under the contract. Quantities required to complete the work in accordance with tender drawings and intent shall be deemed to be included in the Tender price and no variation on account of this will be entertained.

Any increase in quantity due to changes from tender scope of works, shall be brought to the notice of the CURaj and upon written confirmation only the contractor shall proceed

with the works. In the absence of a written permission the CURaj shall not be liable for any such works carried out.

In case of additional items of work if any, which are not found in the original contract, the rate for such additional items of work will be arrived at from the basic rates of materials and labour charges or from Rate only items shown in BOQ

14. Partial Occupancy or Services

During progress of the work (installation or rectification works) completed areas will be occupied and will be used by the owners. The contractor shall however remain fully responsible for the maintenance of installation till the entire work covered by the contract is satisfactorily completed and handed over to the owners.

15. Indemnity

The successful bidder shall at all times indemnify the department, consequent on this works contract. The successful bidder 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 bidder in so far as the latter is responsible. The successful bidder 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 bidder on account of the above.

16. Verification of correctness of equipments at destination

The contractor shall have to produce all the relevant records to certify that the genuine equipments from the manufacturers has been supplied and erected.

17. 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.

18. Structural Alterations to Buildings:

- No structural member in the building shall be damaged/altered, without prior approval from the competent authority through the Engineer-in-charge.
- 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.
- 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.

19. 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.

20. 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.

21. Safe Custody

The contractor shall be responsible for the safe custody of all equipment and materials supplied by him till such time the plant is handed over to the owners with proper documentation. He should therefore, employ sufficient staff for watch and ward at his own expense.

22. Compliance with regulations and indian standards

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:

- Factories Act.
- Indian Electricity Rules.
- B.I.S. & other standards as applicable.
- Workmen's compensation Act.
- Statutory norms prescribed by local bodies like CEA, Power Supply Co., etc

23. 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.

24. Safety of workmen

- All workmen shall enter site with leather-soled shoes and a suitable helmet as protection from falling debris or injury otherwise. The helmets shall be of a particular colour and propriety made to IS/BS standards. Similarly welders are expected to wear goggles during welding/cutting works using either gas or electric welding sets. Insulators shall wear nose masks to prevent inhaling glue and mastics. While moving or handling heavy/sharp objects workmen shall don hand gloves. All workmen, as a good practice, are expected to wear overall of a particular colour for identification from a distance. When working at high levels, guard protection rails/scaffolding must be in place before the workman is instructed to start work. Even in such condition safety belts must be worn and anchored to a fixed and secured support.
- The requirement of safety cannot be overemphasized and needs constant attention of the supervisor in charge of the works.

The site supervisor/Foreman will be responsible for the safety of his workers and negligence in enforcing safety habits can lead to accidents on site, which may result in his replacement.

25. The Contractor shall ensure adequate and prompt after sales service in the form of maintenance, spares and personnel during the guarantee period of 12 months which shall be treated from the date of completion of work and as well as during the maintenance period to minimize the breakdown period. The Contractor shall also ensure that in the event of any breakdown of AC system, that area is made operational within 12 hrs. Otherwise a penalty 500/- per day basis by Engineer-in-charge shall be recovered from the performance guarantee/security deposit.

In case of failure of attended the same within a week the same, the University shall got it rectified from any other vendor cost of which shall be deducted from performance guarantee/ security deposit with additional 15% of penalty amount as departmental charges.

SECTION- F
SCOPE OF WORK & TECHNICAL SPECIFICATION

1. General

- The scope of this work is for Supply, Installation, Testing and Commissioning of Cassette Type Air Conditioners at NAAC Conference Room, Admin Building, Central University of Rajasthan.
- Designing, Supply & Fixing work conforming to these specification/ Explanatory Note and in accordance with the Schedule of Quantities, makes & models and all relevant conditions of the tender.
- The prices quoted shall include all the equipment ancillary material as specified and all such items whatsoever and which may be required to fulfill the intent and purpose as laid down in the specifications. The contractor shall calculate all the quantities and sizes of refrigerant pipe, fitting, cables, control cable, drain pipes, insulation, etc. before installation to avoid any shortfall or surplus. The tenderer shall also include all necessary civil work/ MS frame work for installation of outdoor and indoor units in ductable based air condition system. The cost quoted by tenderer shall also include the eco-friendly refrigerant gas & its charging for proper & specified functioning of air conditioning system.
- Civil work/ MS frame work such as making holes, sleeves, foundations for indoor and outdoor units related to ductable equipments, all cuttings should be properly finished as existing surrounding. The installation of outdoor units on the terrace of building/Ground should be checked structurally for safe installation.
- Proper care should be taken for disposal of condensate drain water so that there is no leakage of condensate water inside the room as well in the route of condensate water pipe line. The layout of refrigerant piping is to be designed in such a way so that it should not disturb the aesthetic of the building/ room, inadvertent damage in the route of pipe should not occur in future & optimum length of pipe line for efficient air conditioning. After completion of the work three sets of 'as erected/ commissioned drawing' of activities listed above shall be submitted.

2. Design Data

- a) The work of air-conditioning and indoor units as specified in schedule of work is required to be carried out in NAAC Conference Room, Administration Building. The campus of Central University of Rajasthan is located at Bandarsindri, Kishangarh, District- Ajmer and State-Rajasthan.
- b) The equipment's involved in air-conditioning are complex in nature comprising of instrumentation control etc. The job, therefore calls for highest order of technical expertise and also requirement of experience of air-conditioning installation with proven performance. The tenderer, shall, therefore obtain, before quoting/ the consent of OEM and furnish the same along with the bid document in respect of execution, testing, commissioning and completion of the installation.

3. Outdoor Unit

- a) The outdoor unit shall be factory assembled, weather proof casing (Material of construction of casing shall be OEM's standard design), constructed from heavy gauge GI sheets/rust proof mild steel in duly enamel/powder coated paint finished steel panels and coated with baked enamel finish. The outdoor unit shall be completely factory wired, tested with all necessary controls & filled with first charge of refrigerant before delivering at site.
- b) The inverter technology based/ Digital Scroll equipment should be capable so that refrigerant piping between indoor units and outdoor unit shall be Extendable upto 50m with maximum height difference between outdoor & indoor unit of 10m & level difference between two indoor

units shall be maximum up to 5m.

- c) The outdoor unit shall consist of Inverter compressor only.
- d) The outdoor unit shall be modular in design and shall be allowed for side by side installation.
- e) The outdoor unit shall be factory tested and filled with first charge of refrigerant R-410A before delivering at site.
- f) The outdoor units should have anti corrosion paint free plate for easy mounting of unit.
- g) The machine must have a sub cool feature to use coil surface more effectively through proper circuit/ bridge so that it prevents the flushing of refrigerant from long piping due to this effect thereby achieving energy savings.
- h) The outdoor unit should be fitted with low noise level and should not be more than 67 db (A) at normal operation when measured at 1.5m distance from ground level.
- i) In case of trouble occurs in an indoor units (s), the continuous operation of system should be possible.
- j) The body of indoor unit shall be as per manufacturers standard specifications.

4. Heat Exchanger

- a) The heat exchanger shall be constructed with copper tubes mechanically bonded to aluminum fins to form a cross fin coil. The aluminum fins shall be covered by anti-corrosion resin film. The System must have sub-cooling heat exchanger further to Condenser to increase refrigerating effect in Indoor units.
- b) The unit shall be provided with necessary number of direct driven low noise level propeller type fans. Each fan shall have a safety guard.

5. Refrigerant Circuit

- a) The refrigerant circuit shall include an accumulator, liquid and gas shut off valves and a solenoid valves or pulse with modulation valve.
- b) All necessary safety devices shall be provided to ensure the safety operation of the system.

6. Safety Devices

The following safety devices shall be part of the outdoor unit; High Pressure Switch, Low Pressure Switch, Fan Motor Safety Thermostat, Over Current Relay, Fusible Plugs, Fuses.

7. Oil Recovery System

- a) Unit shall be equipped with an oil recovery system to ensure stable operation with long refrigeration piping lengths.
- b) The system must be provided with oil balancing circuit to avoid poor lubrication.

8. Remote control complete –

The remote should be corded with wide screen display and able to show the Outdoor Status at any given point of time. Also it shall have different modes like Fan Mode, Heat Mode, Cooling Mode etc. also firm arrange single point operation for remote.

9. Pipe Work General :

All piping work shall conform to quality standards and shall be carried out as per specifications and details given here under:-

- a) The drain piping shall be CPVC.
- b) Pipe crosses shall be provided at bends, to permit easy cleaning of drain line.
- c) The drain line shall be provided upto the nearest drain trap and pitched towards the trap.
- d) Drain lines shall be provided at all the lowest points in the system, as well as at equipment,

where leakage of water is likely to occur, or to remove condensate and water from pump glands.

- e) The drain pipe shall be insulated as per specification in Part 'Insulation'.

10. Copper Piping :

- a) Seamless soft copper tubing, type L shall be used to make connections to equipment, wherever required or specified.
- b) The Flare nuts shall be of brass and the tees, elbows, reducers etc. shall all be of copper.
- c) Refrigerant Piping :
All refrigerant piping for the air conditioning system shall be constructed from soft seamless copper pipe with copper fittings and silver-soldered joints. The refrigerant piping arrangements shall be in accordance with good practice and within the air conditioning industry, and are to include charging connections, suction line insulation and all other items normally forming part of proper refrigerant circuits.
- d) All joints in copper piping shall be sweat joints using low temperature brazing and or silver solder. Before jointing any copper pipe or fittings, its interiors shall be thoroughly cleaned by passing a clean cloth via wire or cable through its entire length. The piping shall be continuously kept clean of dirt etc. while constructing the joints. Subsequently, it shall be thoroughly blown out using nitrogen.
- e) After the refrigerant piping installation has been completed, the refrigerant piping system shall be pressure tested using nitrogen at pressure of 5Kg per sq.cm for both high and low side. Pressure shall be maintained in the system for 24 hours. The system shall then be evacuated to minimum vacuum of 700mm hg and held for 24 hours.
- f) The air-conditioning system supplier shall design sizes and erect proper interconnections of the complete refrigerant circuit.
- g) The thickness of copper piping shall not be less than as mentioned by OEM manuals / norms.
- h) The suction line pipe size and the liquid line pipe size shall be selected according to the manufacturers specified outside diameter. All refrigerant pipes shall be properly laid in the cable tray supported and anchored to the building structure using steel hangers, anchors, brackets and supports which shall be fixed to the building structure by means of inserts or expansion shields of adequate size and number to support the load imposed thereon.

11. Insulation General :

The Insulation of copper refrigerant and drain piping, etc., shall be carried out as per specifications given below : The materials to be used for insulation shall be as follows, unless some other material is specifically mentioned elsewhere.

Insulation Material for Piping System:

- a. The insulation for copper refrigerant, drain piping, etc. shall be carried out from closed cell, electrometric nitrile rubber tubular insulation. The material should be fire proof.
- b. Thermal conductivity of the material shall not exceed **0.035w/mk** at an average temperature of 40°C. The density of material shall be 33+/-3 kg/m³ or 0.033 GM/CC.

14. Application :

- a) The pipe surfaces will be thoroughly cleaned prior to applying the insulation. To avoid application of adhesive in the field the insulation shall be provided with self adhesive. Otherwise the adhesive of suitable grade shall be uniformly applied on the duct/pipe surface and the insulation and cured, before sticking to the pipe. The insulation can be wrapped around the pipe as one piece where size does not permit. The same be cut to exact width/height of pipe.
- b) The pipe insulation joints will be overlapped with a self adhesive tape of the same material. The tape shall be minimum 2.5mm thick and 50mm wide.
- c) For pipe insulation the material should be cut in such a way that the joining/overlapping of the

insulation does not cause any bulging or stretching.

15. Electrical Work

- a) The contractor or his authorized representative should always be available at the site of work to take instructions from Engineer in charge, and ensure proper execution of work.
- b) No work shall commence in the absence of contractor's engineers and they shall certify in writing about the correctness of layout alignment and shall ensure stability of all structural work such as partition panel and other related items.
- c) The tenderer shall quote only makes for which he has satisfactorily executed the job and shall also furnish certificate from OEM to the effect that the such equipment has performed satisfactorily under Indian weather conditions.
- d) All work and materials brought and left upon the ground by the contractor or by his orders for the purpose of forming part of the works, are to be considered to be the property of the CURaj and the same are not to be removed or taken away by the contractor or any other person without consent in writing of the Engineer-in-charge but the CURaj is not to be in any way responsible for any loss or damage which may happen to or in respect of any such work or materials either by the same being lost or damaged by weather or otherwise.
- e) The contractor shall execute the different items simultaneously, as far as possible, so that minimum breakage and repairs are involved.
- f) The contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants of adjacent properties and to the public in general and to prevent any damage to such properties and any pollution of environment and waterways. He shall make good at his own cost and to the satisfaction of the Engineer-in-Charge, any damage to public or private property whatsoever caused by the execution of the work or by traffic brought thereon by the contractor. Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the occupants/users of adjoining buildings.
- g) If the work is carried out in more than one shifts or during night to meet the time period of completion, nothing extra shall be paid on this account.
- h) The contractor shall be bound to follow the instruction and restrictions imposed by the Administration / Police authorities on the working and movement of labour / material / vehicles etc and nothing extra shall be paid on this account.
- i) All the materials are to be got approved from the Engineer-in-Charge before using the same in the work.
- j) The electrical work will be carried out in accordance with the General Specifications 2013 for electrical works in (part I) internal, CPWD specifications (part II) external, except as otherwise specified in the description of items given in the Schedule of Quantities or in the attached Technical Specification while complying in all respects with the requirements of the latest Indian Electricity Rules in force at the time of execution.
- k) The electrical work shall be carried out simultaneously with the civil and interior works.
- l) If any minor alterations are found necessary, the contractor shall do the same within tendered rates.
- m) The contractor shall employ adequate labour to complete the work within the stipulated time and make his own arrangements for storage of materials etc.
- n) Necessary clarification required by the department shall have to be furnished by the tenderer within the time given by the department for the same. The tenderer will have to depute his representative to discuss with the officer(s) of the department as and when so desired. In case, in the opinion of the department a tenderer is taking undue long time in furnishing the desired clarifications, his bid will be rejected without making any reference.
- o) Outdoor and indoor units shall be of the same make.

SECTION- G
EQUIPMENT TECHNICAL DATA SHEET

Contractor should furnish technical data of the equipment and accessories offered by him as per the scheme and bill of quantities. Some sample technical data sheets are enclosed for the contractor to understand the expected technical data. Similarly the technical data for all other equipment are supposed to be enclosed with offer. Manufacture's printed data sheet for all components should be enclosed along with technical data sheet.

S. No.	Description	Unit	Condition of services
	Indoor Unit / Evaporator Unit		
1.	Unit no./model no.		
2.	Manufacturer		
3.	Operating weight	Kg	
4.	Overall dimension	mm	
5.	Dimension of Coil	Mtr/mm	
6.	Material of Coil		
7.	Operating Range Cooling		
8.	Operating Range Heating		
9.	Fan Air Flow Rate	CFM	
10.	Fan Speed	RPM	
11.	Air Flow Type		
12.	Sound Level	db	
	Outdoor Unit		
1.	Discharge Type		
2.	Make		
3.	Model		
4.	Cooling Capacity	Btu/h or kW	
5.	Heating Capacity	Btu/h or kW	
6.	Dimension (H*W*D)	mm	
7.	Machine Weight	Kg	
8.	Sound Level	db	
9.	Airflow rate	m ³ /min	
10.	Compressor Type : Screw / Rotary / Scroll		
11.	Compressor Make		
12.	Compressor Model		
13.	Refrigerant Type		
14.	Refrigerant Charge	Kg	
15.	Condenser Tube Material		
16.	Condenser Tube thickness	Mm	
17.	Condenser Tube diameter	Mm	

ANNEXURE – I
(to be submitted with Technical Bid)

Details of works of similar type executed by the bidder

S.No	Name of Company/ Organization with full address, phone, email and name of contact person	Work Description	Cost of work in crores	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Ref. & Date of the Order	No. & Date of completion certificate attached.	Remarks
1	2	3	4	5	6	7	8	9	10

Signature of Bidder(s) with Seal

- Indicate gross amount claimed and amount awarded by the Arbitrator.
- Work order & Completion certificate to be attached.
- Supporting documents like notice of award, schedule of qualifying works shall also be attached.

ANNEXURE – II
(to be submitted with Technical Bid)

FINANCIAL INFORMATION

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

S.No.	Descriptions	Figure
1.	Average Gross Annual Turn Over of last three financial years	
2.	Net Profit/Loss of last three financial years	

Signature of Bidder(s) with Seal

Signature of Chartered Accountant with Seal

ANNEXURE – III
(to be submitted with Technical Bid)

LIST OF WORKS WHICH ARE IN HAND (PROGRESS)

S.No	Name of Work	Name & particulars of Dept. where work is being executed	Value of Work	Position of works in progress (Date of start & completion)	Remarks
1	2	3	4	5	6

Seal & Signature of Bidder

ANNEXURE – IV
(to be submitted with Technical Bid)

SELF DECLARATION CERTIFICATE
(To be submitted on Non-Judicial Stamp Paper)

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 – V

**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 his 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)

LIST OF APPROVED MAKES FOR EQUIPMENT & MATERIALS

S. No.	Details of Materials / Equipments	Manufacturer's Name / Make
A.	Internal EI	
1.	MCB, Isolator, Industrial Plug Socket, RCCB, RCBO's	Schneider Electric / Legrand / Hager/ L&T / C&S / ABB / Siemens
2.	MCBDB & Loose Wire Box	Legrand/ L&T / C&S / Hager / Schneider / ABB/ Siemens (Note : MCBs Make shall be same as DBs Make)
3.	Change Over Switches	L&T / Havells / HPL / Hager / C&S / Socomac / ABB / ASCO
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 / Bonton / Grandlay
6.	Armoured/Unarmoured telephone cable, Coaxial Cable/LAN Cable	Delton / Finolex / RR Kabel / Polycab/Havells / Bonton / Grandlay / KEI
7.	MS Conduit (ISI Marked) with heavy duty MS conduit pipe accessories	BEC / NIC / AKG / RMCON (Note : The make of accessories will be same that of conduit pipe & will comply to IS / 4768 part 2 2003)
8.	PVC Conduit (ISI Marked) with heavy duty PVC conduit pipe accessories	AKG / Norpack / BEC / Polycab / Precision / Astral / Finolex / Pressfit
9.	Modular Switch, Socket/Telephone Socket/ Cable TV Socket/ Data outlet Socket / Fan Regulator/ G.I. Boxes Etc.	Legrand (Arteor) / Schneider Electric (Zencelo) / Honeywell- MK (Elements)
10.	Modular MCB	Legrand / Schneider Electric /MK-Honeywell
11.	Selector Switch & Toggle switch	Salzer (Larsen & Toubro) / Siemens / Kaycee / C&S/Schneider
12.	PVC Trunking	Mk (Honeywell)/ Legrand / Schneider
13.	GI pipe (ISI Marked)	Tata / Jindal (Hissar) / SAIL
14.	Paints	Asian / Berger /Dulux
15.	Terminal Blocks and Connectors	Elmax / Wago / Hensel / Connectwell
16.	Phenolic Laminated Sheet / Bakelite Sheet	Hylam / Formica (P-I Grade) / Mylam / Greenlam
17.	Cat-6/Cat-6A Cable, Wires & Fiber Optic Cable	Amp / Beldon / Legrand / Krone Communication / Molex
18.	Indoor and Outdoor LED fittings /LED Lamp/ LED Tube	Wipro/ Philips / Bajaj/ Havells/ Trilux / Lighting Technology (LT)
19.	Decorative Indoor/Outdoor LED fitting	Wipro / Philips / Trilux / Regent / Osram / Lighting Technology (LT)/Bajaj/Havells/Crompton
20.	Exhaust Fan/Fresher Fan	Havells / Crompton Greaves / USHA / Almonard / Alstom
21.	BLDC Ceiling Fan	Havells / Crompton Greaves / Atombarg Gorilla / Superfan / Usha

22.	Wall Bracket Fitting	Havells / Wipro / Decon / Jaquar / Philips / Bajaj / Trilux
23.	Geysers	Racold / CG / Havells / Jaquar / AOSmith / Usha / Venus
24.	Air circulator / Wall Fan	Havells / Usha / Almonard / Crompton / Orient
25.	LED Street Lights with inbuilt Solar Panel & Controller	Havells / Crompton / Philips / Wipro / Bajaj
26.	Ornamental Pole (Factory Finish)/ Hot Dipped Galvanized Octagonal Pole /High Mast	Valmont / Philips / Crompton / Wipro / Bajaj / Keselec / Singh profile /Transrail
27.	Hot Dipped Galvanized Octagonal Pole /High Mast	Valmont / Philips / Crompton / Wipro / Bajaj / Keselec / Singh profile /Transrail/ Utkarsh
28.	Polycarbonate Junction Box / Enclosure / Pole box	Hensel / Spelsberg / Naptune-Bals / Sintex/Standard
B.	POWER CABLE	
1.	XLPE insulated PVC sheathed Alum. / Copper Conductor Armored cable of 1.1 KV grade	Finolex / Polycab / KEI / Havells / Grandlay / RR Kabel /Bonton/LAPP/RPG
C.	HT Cable	
1.	H.T. cable (ISI marked)	Finolex / CCI / Polycab / KEI / Havells / RR Kabel / Grandlay / LAPP/RPG
D.	Sub Station Equipments	
1.	LT Panel / Meter Panel Board/Outdoor Feeder Pillar / APFC Panels (Above 200 Amp Incomer)	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. /Dynamic Electropower Pvt. Ltd./ Pristine/ Neptune /Pyrotech India Electronic pvt Ltd.Udaipur
2.	LT Panel / Meter Panel Board/Outdoor Feeder Pillar / APFC Panels (Upto 200 Amp Incomer)	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. /Dynamic Electropower Pvt. Ltd./ ASPL (Associated Switchgears & Projects Ltd.) / Pristine / Neptune /Allied engineers/ Pyrotech India Electronic pvt Ltd.Udaipur/Johns electric co.pvt Ltd Jaipur
3.	Rising main / Bus Trunking	C&S / L&T / Schneider / Legrand / Godrej
4.	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 (Winbreak 1/2) / ABB (TMax) / Hager

5.	Contactors/Relay /Timer	Schneider Electric / L&T / BCH / Siemens / Legrand / ABB / C&S / Hager/
6.	Potential Transformers / Current Transformer	Automatic Electric / Matrix / Precise / L&T / Kappa / Procom
7.	LED type indicating lamps / Push Button	Schneider Electric / L&T / Siemens / Vaishno
8.	Digital Meters (A/V/PF/Hz/KW/KWH)	Conzerv / Larsen & Toubro / Secure / AE / Socomac / Neptune /Hager
9.	Fasteners / GI Clamps	Hilti / Fisher / Chilli /OBO
10.	D.W. Corrugated HDPE Pipe (ISI marked)	REX / Dura plast / Zenduct / Gemini(Tripiti) / Duraline / Keshav Kripa Polyplast (LLP)
11.	Transformer (Oil / Dry type) Upto 250 KVA	Crompton / ABB / Raychem / Schneider / Voltamp / Uttam Bharat / United / Bharat Bijlee/RTS-Jaipur
12.	Transformer (Oil / Dry type) Above 250 KVA	Crompton / ABB / Schneider / Sterling & Wilson / Raychem / Bharat Bijlee /Voltamp
13.	HT Panel / Ring Main Unit	Siemens / ABB / L&T / Schneider / C&S
14.	HT End Termination / Cable Jointing Kit	Reychem / Denson / Cap Seal / Safekei / 3M
15.	ACBs	Siemens (3WL-ETU45B) / L&T (U-Power-OMEGA MTX 4.0) / ABB (Emax)PR122 / Legrand (DMX ³ MP4) / Schneider (MVS Series) / C&S (Winmaster 2/3)
16.	Rubber Mat (MV / HT)	Jyoti / Deep Jyoti / Premier (duly ISI marked)
17.	Fire Extinguishers	Minimax / Safex / Life Guard / Kanex / Omex / Firequip (ISI Mark)
18.	Capacitors & Reactors / APFC Relay	EPCOS/ L&T / DUCATI / ABB / Siemens / Schneider / Neptune
19.	Cable Glands /lugs .	Baliga lighting / Comet / Cosmos / Dowells / Lapp / Gripwell
20.	Perforated Cable Tray	Pilco / Slotco /RMCON/ BEC / Steelways / OBO
21.	SS Wire mesh cable Tray /Raceways	Legrand / OBO / MK
22.	Programmable Logic Controller (PLC)	Siemens / Woodward / Allen / Bradley/ Legrand / OBO / MK-Honeywell
E.	DG Set	
1.	Diesel operated Power Generating Engine Upto 200 KVA	Cummins India / Caterpillar / Ashok Leyland / KOEL
2.	Diesel operated Power Generating Engine Above 200 KVA	Cummins India / Caterpillar / KOEL / Volvo Penta
3.	Alternator	Stamford / Lerroy Sommer / Kirloskar Electric / Caterpillar / Crompton Greaves
4.	DG Set Canopy / Enclosure & AMF Panel	As per OEM / OEA of respective DG Set manufacturer
5.	Alarm Annunciator	Advani Oralikon / Larsen & Toubro / Minilec
F.	Fire Fighting Equipments	
1.	MS Pipe/GI Pipe	Tata / Jindal Hisar / SAIL
2.	Forged Steel Fittings / Flanges	Johnson Industries / VS Forge / JK Forging / Trueforge
3.	Pipe Hangers	Chilli / Hilti / OBO / Fisher

4.	Gun Metal / Brass / NRV/ Gate Valve/Check Valve/Foot Valve (ISI marked)	Sant / Leader / Advance / Audco / Zoloto/Honeywell
5.	CI Sluice Valve/ Butterfly Valve/ NRV/ Y - Stainer (ISI marked)	Audco / Advance / Kirloskar / Zoloto/Honeywell/Kartar/Kalpna
6.	Fire pump/Jockey pump	Kirloskar/KSB/Matherplatt(Wilo)/Crompton
7.	Electrical Motor	ABB / Siemens / Kirloskar / Grundfos / Crompton / Bharat Bijli/ Matherplatt(Wilo)
8.	Diesel Engine for Fire Pump	KOEL / Ashok Leyland / Cummins
9.	Couplings (Tyre – Type)	Lovejoy / Fenner
10.	Anti Vibration Mountings / Neoprene Gasket	Kanwal Industrial Corporation / Dunlop / GERB / Resistoflex
11.	Pressure Switch (ISI marked)	System Sensor / Indfoss / Danfoss / Switzer
12.	Pressure Gauge (ISI marked)	H Guru / Fiebig / Dwyer/ Hebig/Honeywell
13.	Landing Valve/Fire Hose coupling /First Aid Hose Reel and Drum /Shut of Nozzle /Branch Pipe/Fire Brigade inlet / RRL Hose Pipe / Thermoplastic Pipe (ISI marked)	New Age / Safeguard / Lifeguard / Padmini / Omex / Minimax/Safex
14.	Water Flow Switch (FM / UL listed)	System Sensor / Switzer / Rapid Control / Honeywell/ Danfoss
15.	Pipe coat	Pypcoat / Makphalt / Rustech
16.	Level Controller & Indicator (Water) (ISI Marked)	Auto Pump / Cirrus Engineering / Techtrol
17.	Fire Sealent	Promat / Birla / 3M / Hilti
18.	Single Phase Preventer / Water level guard	Schneider Electric / L&T / Siemens / ABB / Minilec
19.	LT Jointing Kit / Termination	Reychem / Denson / Cap Seal / Safekei / 3M
20.	Batteries	Exide / Rocket / HBL / Pulse / Amco / Amaraja
21.	Battery Charger	Statcon / Amarraja / CDC / AE / Expofyn / Thycon India/ Procom/Microtek
22.	Epoxy Paint	Dulux / Berger / Asian / Nerolac
23.	Air Release Valve	Rb / Tbs / Cimbrio / Zoloto
24.	Solenoid Valve / Spray Nozzle	Parker / HD / Tyco / Emersion / Honey Well
25.	Sprinkler Head	HD / Tyco / Viking / Omex / Easy Flex
26.	SS Flexible Drop	HD / Omex / Newage / Tyco / Lifeguard / Easy Flex
27.	Deluge Valve	Tyco / Viking / HD
G.	Fire Alarm System	
1.	Addressable Fire alarm control panel / Repeater panel / multi sensing detector /Fault isolator / Strobe light / Hooter / Manual call box / Response indicator	Johnson Control / Notifier / Siemens / Boschmake
2.	Cat-6 /Cat-6A Cable, Wires & Fiber Optic Cable	Amp / Beldon / Legrand / Krone Communication / Molex
3.	HDMI cable	Lightware/AMx/crestron/Extron
4.	Fire retardant cable	Finolex / Polycab / KEI / Havells / Grandlay/ RR Kabel //Bonton/RPG/LAPP
5.	Amplifire/Speaker	Bosch/Honeywell/Yamaha/JBL/Shure
H.	Water Supply Pump Sets	
1.	Mono Submersible/ Submersible pump Set	KSB / CG / Kirloskar / Grundfos / Mather & Platt (Wilo)

2.	DOL / Star Delta Starter	L&T / BCH / Havells / C&S / Siemens / Schneider
3.	Submersible Cable	Finolex / RR kabel / Polycab / Havells / KEI/ Bonton
I.	EPABX System	
1.	EPABX System / Master Console Phone/	Siemens / Cisco / Alcatel / Coral / Panasonic / AVAYA/ Matrix
2.	Analog Telephone instrument	Beetal / Tata / Panasonic/ Seimens
3.	18 SWG Sheet (Chrono Box)	Topaz / Coral / Crown
4.	Constant Voltage Transformer	Topaz / Bhurji / Delta / Servokon
J.	Water Purifier	
1.	RO / Water Purifier	Kent / Ion Exchange / Aquaguard (Eureka Forbes)/ Havells
2.	Drinking Water cooler	Voltas / Blue Star / Usha
K.	Solar Water Heating System	
	Solar Water Heating System	Inter solar / Racold / BHEL / Electrotherm / Rashmi/V-guard/Emmvee Solar
L.	CCTV System	
1.	IP based Camera (All type) / NVR / Server	Bosch / Pelco / Axis / Sony / Tyco / Honeywell
2.	Conventional Camera/Connect (Dome /PTZ / Bullet / C-mount type)	Bosch / Honeywell / Pelco / Axis / Tyco / Sony
3.	Managed Networking layer Switch	Cisco / DLink / Extreme / Fortinet / Ruckus/HP/Netgear
4.	U Rack	Valrack(Legrand) / EOM Rack / Belchem /Comrack/ Vertiv
M.	Uninterrupted Power Supply (UPS)	
1.	Online / Offline UPS	Vertiv / Numeric / Peaguses (Auto Meter)/ Socomac/Eaton/Schneider
2.	SMF Batteries	Exide/Amron/Rocket/HBL/Pulse/Amco/ Amaraja
N.	Solar Power Generation System	
1	Solar Power Generation System	REIL / BHEL / BEL / CEL / REC / SOLON / VIKRAM / ABB / Havells
2	Junction Box	VNT / SUN GARNER / OEM of SPV Modules
3	SPV Inverter	Sungrow / Delta / SMA / ABB
4	Module Mounting Structure	As per MNRE / Manufactures Standards
5	XLPE Aluminium / Copper Cable	Finolex / Universal / Nicco / RPG Cables / KEI / Grandlay/LAPP / Polycab
6	Solar Cable XLPO Insulated (DC)	RR Kabel / Polycab / Havells / Finolex / Lapp
O.	LED TV	LG / Samsung / Panasonic / Toshiba / Sony
P.	Air Conditioners	
1.	Split/Cassette/Window/Tower/ Ductable Air Conditioners	Mitsubishi /Daikin /Hitachi/ O-General/ Bluestar/ Carrier
2.	VRV/VRF – Indoor/Outdoor Unit	Mitsubishi /Daikin /Hitachi/ O-General
3.	Voltage Stabilizer	V Guard/ Blue bird/ Voltas/ Servocon
4.	Copper Pipe	Total line/Mandev/Rajko/Diamond/Star/Camipro
5.	CPVC pipe	Ashirwad/Supreme/Astral/Prayag
6.	GSS Sheet (For site fabricated duct)	SAIL/Jindal/Tata
7.	Aluminium Sheet	Hindalco/Balco/Nalco
8.	Flexible duct/Company fabricated duct	Waves/Zeco/Ductofab/Airflow/Caryaire/ Atco
9.	Supply/Return Grill/diffuser	Airflow/Trox/Dynacraft/ Caryaire/Matejoints

Note- Any item of make other than above said will be got approved by Engineer-in-charge before brought at site.