

TENDER DOCUMENT

Name of work: SITC of 3 nos. of 1.5 TR Split AC in TC - 4A at NIPGR Campus, New Delhi.

CLIENT: DIRECTOR NIPGR,
NEW DELHI

COST OF TENDER DOCUMENT:- Rs. 500/-

TENDER DOCUMENTS

Name of work: SITC of 3 nos. of 1.5 TR Split AC in TC - 4A at NIPGR Campus, New Delhi.

Owner : Director, NIPGR Campus, New Delhi

Tender issued to :

**Place for submission/
Place opening of tender document:**

NIPGR Campus,
Aruna Asaf Ali Marg,
New Delhi-110067

Consultant Engineer
NIPGR Campus,
New Delhi

Last date for sale of tenders: 17.11.2017 before 16.00hrs.
Date/Time of submission : 20.11.2017 before 14.30hrs.
Date/Time of opening : 20.11.2017 at 15.00hrs.

Consultant Engineer
NIPGR Campus,
New Delhi.

TENDER FORM

To

The Director
NIPGR CAMPUS,
New Delhi.

Dear Sir,

I/We have read and examined the following Tender Documents relating to the "Name of work: SITC of 3 nos. of 1.5 TR Split AC in TC - 4A at NIPGR Campus, New Delhi."

Tender Form

- Tender Notice
- General Conditions
- Instruction to bidders
- General Information
- Special terms and conditions of contract
- Annexure-I (Undertaking on a Non-Judicial Stamp Paper worth Rs. 100/- duly notarized)
- Annexure-II (Certificate for Site Inspection)
- Annexure-III (Check List for Pre-qualification Bid)
- Terms & Conditions
- Schedule of Quantity

I/We hereby offer to execute the work complete in all respects specified in the under written Memorandum within the time specified therein or during the allowed extended time at the rates specified in the bill of Quantities and in accordance, with the specifications, designs, drawings and instructions in writing referred to in the conditions of tender.

(Seal & Signature of Contractor)

TENDER NOTICE

File No.: NIPGR/Engg./5/8/2017-18

Dated: 30.10.2017

Sealed item rate Tenders (in two bid system) are invited on behalf of the Director, NIPGR, New Delhi from the eligible contractors of Govt. organizations, Govt. Autonomous organizations/ PSUs and other reputed organizations so as to reach this office up to 2.30 P.M. on or before 20.11.2017 for the following work:

Name of work: SITC of 3 nos. of 1.5 TR Split AC in TC - 4A at NIPGR Campus, New Delhi.

Sl. No.	Estimated Cost	EMD (In ₹)	Time for Completion	Last date & time for sale of Tender Documents	Last date & Time of receipt of Tender	Date & time of opening of tenders
1.	2.	3.	4.	5.	6.	7.
1.	₹ 5,05,000.00	₹ 10,100.00	30 days	17.11.2017 16.00 Hrs.	20.11.2017 14.30 Hrs.	20.11.2017 15.00 Hrs.

Tender document can be obtained up to 16.00 Hrs. on all working days on payment of ₹ 500.00 (₹ Five hundred only) in cash (Non-refundable) towards the cost of tender. The earnest money shall be in the form of Demand Draft of a Scheduled Bank issued in favour of the **Director, NIPGR, New Delhi**.

The tender document can also be downloaded from our website www.nipgr.ac.in and Govt. CPP Portal <https://eprocure.gov.in/cppp/>. The tender document downloaded from website must be accompanied with ₹ 500.00 (₹ Five hundred only) in the form of Demand draft in favour of the "**Director, NIPGR, New Delhi**" towards the cost of tender document, otherwise the tender will not be considered.

The bids will be accepted in respect of eligible agencies having successfully completed at least three similar works each costing not less than ₹ 2.02 lakhs or two similar works each costing not less than ₹ 2.52 lakhs or single similar work of costing not less than ₹ 4.04 lakhs during the last three years ending 31st Aug. 2017 and having annual financial turnover of ₹ 5.00 lakhs, during the last three years ending 31st Mar. 2017. Similar works means "Supply, Installation, Testing and Commissioning of ACs in Govt. organizations, Govt. Autonomous organizations/ PSUs and other reputed organizations. Copies of the completion certificate of satisfactory completion of work to be enclosed. The bidder must enclose the authorization certificate issued by Principals / OEM.

The Director, NIPGR, reserves the right to accept or reject all or any of the tender without assigning any reasons thereof.

Consultant Engineer
NIPGR, New Delhi

GENERAL CONDITIONS

1. Sealed tenders on item rate basis in two bid system are hereby invited from pre-qualified contractors for the work of **"Name of work: SITC of 3 nos. of 1.5 TR Split AC in TC - 4A at NIPGR Campus, New Delhi."**

The tender document consists of Tender form, Tender Notice, Instructions to bidders, General Information, Schedule of quantity, General Conditions, etc. which can be had at a cost of Rs. 500.00 (Rs. Five hundred only) from the office of NIPGR, NIPGR, Aruna Asaf Ali Marg, New Delhi. Purchase of tender document is obligatory on the part of the tenderers & bid in no other form will be accepted.

2. The tender documents shall be placed in sealed cover as mentioned in Procedure of Submission of tender and addressed to the Director, NIPGR Campus, New Delhi. The tender shall be received by the Director, NIPGR Campus, New Delhi before 14.30 hrs. on 20.11.2017 and shall be opened on the same day at 15.00 hrs. in presence of the tenderers or their authorized representatives who may like to be present. Any envelope received after the said date and time shall not be entertained under any circumstances and no consideration what so-ever shall be given to anything that might be contained in any such envelope.
3. The time allowed for the completion of work is **30 days** to be reckoned from the 10th day after the date of written order to commence the work.
4. Every tender shall be accompanied by earnest money for ₹ 10,100.00 (₹ Ten Thousand One Hundred Only) in the form of demand draft drawn in favour of the **Director, NIPGR payable at New Delhi**. Any tender not accompanied by such earnest money will be rejected straight away.
5. The contractor will submit his tender after examining the tender documents, scope of work, specifications, clauses, additional terms of contract agreement, special terms & conditions, bill of quantities etc.
6. The offer shall remain valid for 180 days from the date of opening of Tender. The value of tender can be increased or decreased and any item can be added, deleted, withdrawn or substituted without any notice as per the requirements of NIPGR without assigning any reason.
7. If a tenderer whose tender is accepted fails to undertake the work as per terms of the contract within 10 days to be reckoned from the date of issue of allotment letter, the earnest Money deposited will be forfeited.
8. NIPGR does not bind itself to accept the lowest or any tender and reserves the right to reject any or all tenders without assigning any reason.
9. NIPGR will not pay any expense, whatsoever incurred by tenderer for the preparation and submission of tenders.
10. This notice inviting tender, will form part of the contract agreement to be executed by the successful tenderer with the NIPGR
11. The successful tenderer shall have to sign the contract agreement within 10 days of the allotment of work.

Seal & Signature of Contractor

**Consultant Engineer
NIPGR, New Delhi**

INSTRUCTIONS TO BIDDERS

1. GENERAL INSTRUCTIONS:

The works referred here-in shall cover the entire scope of the proposal. The "Owner" where appearing in these documents shall mean Director, NIPGR,

2. PROCEDURE FOR SUBMISSION OF TENDERS:

The following procedure shall be adopted for submission and opening of tenders The sealed envelope SUPERSCRIBED Tender for: "Name of work: SITC of 3 nos. of 1.5 TR Split AC in TC - 4A at NIPGR Campus, New Delhi."

ENVELOPE NO.- 1

This envelope shall contain only the earnest money deposit & technical bid as well as site visit certificate enclosed with tender and will be opened first.

ENVELOPE NO.- 2

This sealed envelope shall contain the financial bid of the contractor as per bill of quantities. This envelope shall be opened only after the EMD contained in envelope No.1 & technical bid is found in order as per the requirements of NIPGR. The date of opening of price bid shall be intimated later on.

The sealed cover containing envelope 1 & 2 shall be opened on the prescribed date and time in the presence of tenderers or their authorized representatives who may wish to be present.

3. TENDERERS TO STUDY ENTIRE TENDER DOCUMENT CAREFULLY:

Submission of a tender by a tenderer implies that he has read all the stipulations contained in this tender document and has acquainted himself of the nature, scope and specifications of the works to be followed.

4. TENDERER TO SUBMIT THE ENTIRE TENDER DOCUMENT:

The tenderer shall submit all documents issued to him for the purpose of this tender after duly filling the same in all respects. Tenders which are found to be vague or incomplete shall be rejected summarily.

5. TENDERERS TO QUOTE FOR ALL ITEMS:

The tenderer shall quote his rates in words and figures with reference to each item and must enter for all the items shown in the attached Bill of quantities. Incomplete offer shall be liable for rejection. In case there is a discrepancy in "words" and "figures", the rate in words will be taken as correct for evaluation of tender. All quantities should be calculated as per percentage given by the contractor and total should be given of every sub head and grand total should also be given of all heads.

6. VALIDITY PERIOD OF OFFERS:

The rates quoted in the tender shall hold good for 180 days from the date of opening of the tender. The validity period shall be extendable with the mutual consent of both the parties. No tenderer can withdraw/or modify his tender or revoke the same within the said period of 180 days. If a tenderer on his own withdraws or revokes the tender or revises or alters or modifies the tender for any item or condition within a period of aforesaid 180 days his earnest money deposit shall stand forfeited.

7. TENDERER TO SIGN ALL PAGES:

The tenderer shall stamp and sign at the bottom right hand corner of every page of the tender documents in token of acceptance of tender conditions and for the purpose of identification.

8. ERASURES AND ALTERATIONS:

Tenders containing erasures and alterations of the tender documents are liable to be rejected unless these are authenticated by the person signing the Tender Documents.

9. TENDERER TO SATISFY HIMSELF OF SITE CONDITIONS:

Tenderers are advised to inspect and examine the site and its surroundings and also signed a certificate of site visit enclosed as per Annexure 'II' and satisfy themselves before submitting their tender regarding nature of the site conditions, the means of access of the site, the accommodation they may require and in general obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender in any manner. A tenderer shall be deemed to have full knowledge of the site, whether he inspects it or not and no compensation or otherwise of any charges incurred or to be incurred consequent on any misunderstanding or otherwise shall be admissible.

10. EARNEST MONEY:

The tender shall be accompanied by earnest money of ₹ 10,100.00 (₹ Ten Thousand One Hundred Only) in the form of Demand Draft only drawn in favour of the **Director, NIPGR payable at New Delhi**. Earnest money of the unsuccessful bidder(s) shall be refunded after expiry of the validity period of the tenders/allotment of works whichever is earlier.

11. TENDERER TO QUOTE BOTH IN FIGURES AND WORDS:

All tenderers shall quote the rate in figures as well as in words, the amount of each item shall be worked out and the requisite total given. The total amount shall be written both in figures and in words.

12. TENDER LIABLE TO REJECTION:

Tenders which do not fulfill all or any of the conditions laid down in this notice, or contain conditions not covered and / or not contemplated by the Conditions of contract and/or expressly prohibited therein or stipulate additional/alternative conditions shall be liable to be rejected and his earnest money will be forfeited.

Tenders shall also be liable for rejection on any of the following grounds :-

- i) Tenders submitted late
- ii) Tenders containing remarks uncalled for.
- iii) Conditional tenders
- iv) Tenders not submitted on prescribed Performa.
- v) Telegraphic tenders.
- vi) Not submitted the physical inspection of site certificate Annexure 'II'.

13. CORRESPONDENCE:

Tenderers must mention their postal address and telephone number(s) of the Chief Executive/authorized agent or attorney in the tender. The tender submitted by the tenderer will be rejected if he or his agent cannot be contacted on the last known address or on the intimated telephone number(s) after reasonable search in which event earnest money may be forfeited by the NIPGR.

14. NIPGR NOT TO ASSIGN ANY REASON FOR REJECTION OF TENDER:

NIPGR hold absolute discretion to accept or reject the lowest or any other tender without assigning any reason. No claim on this account shall be entertained.

15. AMENDMENT IN TENDER DOCUMENTS:

NIPGR reserves the right to revise or amend the Bid Documents upto the date prior to the date notified for opening of the tenders and also the right to postpone the date of submission and opening of tenders without assigning any reason, whatsoever.

16. REFERENCE IN TENDER DOCUMENTS:

Director, NIPGR, shall be referred as "Owner" in all the documents of Tender documents/contract agreement.

Seal & Sign of Contractor

Consultant Engineer
NIPGR, New Delhi

GENERAL INFORMATION

1	Accepting Authority	Director, NIPGR, New Delhi.
2	Earnest money	₹ 10,100.00 (₹ Ten Thousand One Hundred Only) to be furnished with the tender in the form of the demand draft (No interest is payable on security deposit)
3	Security deposit	The security deposit will be collected by deductions from the running bills of the contractors at the rate mentioned below and the earnest money, if deposited at the time of tender, will be treated as part of security deposit. Performance security may be accepted as Bank Guarantee/DD of Scheduled Banks and State Bank of India. A sum @ 10% of the gross amount of the bill shall be deducted from each running bill of the contractor till the sum along with the sum already deposited as earnest money, will amount to Security Deposit of 5% of the tendered value of the work. In addition, the contractor shall be required to deposit an amount equal to 5% of the tendered value of the contract as Performance Security within the period prescribed for commencement of work in the letter of award issued to him.
4	Authority competent to grant extension of time	Director, NIPGR or authorized person by Director, NIPGR
5	Tools & plants	To be arranged by contractor
6	Authority competent to reduce the compensation amount	Director, NIPGR
7	Release Security Deposit	The performance security shall be refunded to the contractor on completion of the work and recording of completion certificate by Institute and the security deposit of 5% of work done shall be released after defect liability period. In case the agency fails to complete / carryout the work to the satisfaction of the Consultant Engineer, or violates any condition of the work order / tender, the security deposit / BG / performance security will be forfeited / revoked.
8	Defect Liability Period	Twelve months or for the period of standard guarantee / warranty offered by the manufacturer on equipment (whichever is later) from the date of completion & handover to the department.
9	Periodicity of submission of Bills	After completion of work.

Seal & Signature of Contractor

Consultant Engineer
NIPGR, New Delhi

SPECIAL TERMS AND CONDITIONS OF CONTRACT

1. SPECIFICATIONS:

If specifications for an item of work are not covered by B.I.S. Specifications prevailing as on date of tender, the same shall be decided by the NIPGR and shall be binding on the contractor.

The Director shall have the power to insist upon the contractor to purchase and use such materials of particular approved make which may in his opinion be necessary for proper and reasonable compliance with the specifications and execution of work.

2. WORK AND WORKMANSHIP:

To determine the acceptable standard or workmanship, the NIPGR may order the contractor to execute certain portions of works and services and the like under the close supervision of Engineer, NIPGR/Consultant. On approval, these items shall be labeled as guiding samples and works executed to conform to these samples.

3. CONTRACTOR TO BE LIABLE FOR ALL TAXES ETC.

The rates specified in the tender shall be inclusive of VAT, sales taxes, service tax, toll, Customs fees, octroi, royalty etc. or any other taxes. However if any fresh taxes are imposed by State/Central/Statutory bodies during the currency of contract, the same shall be borne by NIPGR.

4. FORCE MAJEURE:

The right of the contractor to proceed with the work shall not be terminated because of any delay in the completion of the work due to unforeseeable causes beyond the control and without the fault or negligence of the contractor, including not limited to acts of God, or of the public enemy, restraints of a sovereign state, firms, floods, unusually severe weather.

5. JURISDICTION:

Not with standing any other courts having jurisdiction to decide the questions forming subject matter of a suit any and all actions and proceedings arising out of or relative to this contract (including any arbitration in terms thereof) shall lie only in the court of competent Civil jurisdiction in this behalf at New Delhi., where this contract is to be signed on behalf of Director NIPGR and only the said court shall have jurisdiction to try any such actions and/or proceedings to the exclusion of all other courts.

6. SCOPE OF WORK:

The scope of work is as per enclosed schedule of quantity.

7. CONTRACTOR'S RESPONSIBILITY FOR THE MANNER OF EXECUTION OF WORKS

The contractor shall be solely responsible for the manner and the method of executing the work. The work shall be subject to the approval of NIPGR from time to time for purposes of determination of the question whether the work is executed by the contractor in accordance with the contract.

8. SUBMISSION OF BILLS:

Contractor is to submit the bill and record of measurements in approved Performa of the NIPGR for works executed by him. The Bill shall be submitted **after completion of work**.

9. The works shall be inspected by Engineers & Consultants of NIPGR. The contractor shall extend full co-operation and render all necessary facilities for inspection of the work to the inspecting authority without any additional cost to NIPGR. It must be noted that any observations/ comments/ recommendations of the said Technical personals shall be binding on the contractor

10. It shall always prevail, unless otherwise specifically stated, that the entire provisions of Tender document been opened upon and accepted for compliance by the contractor without any reservation.

Consultant Engineer
NIPGR

Seal & Signature of Contractor

(Undertaking on a Non-Judicial Stamp Paper worth Rs. 100/- duly notarized)

I / We (bidder) hereby give an undertaking that:

- a) I/We have not been blacklisted during last three years by any Govt. Department/Govt. Autonomous Body/Institution, etc.;
- b) I/We do not have any dispute with any of the Govt. Departments/Govt. Autonomous Bodies/Institutions, etc.;
- c) I/We have never been certified as 'Unsatisfactory Performer' for the said services provided to the Govt. Departments/Govt. Autonomous Bodies/Institutions;
- d) I/We have not submitted any fake/forged certificates/documents and later, if any such 'Certificates/Documents' found to be fake/forged or contains willful wrong/incorrect information, suitable legal action may be initiated against me/us/agency besides 'forfeiture of Earnest Money Deposit' and 'Blacklisting' etc.
- e) I/We shall not withdraw my/our bid after opening of Technical Bid and if done so, the NIPGR shall be authorized to forfeit the EMD submitted by me/us.

Seal and Signature of the Authorized
Person of the Agency

Name and designation of the
Authorized Person of the Agency

Place:

Date:

'CERTIFICATE FOR SITE INSPECTION'
Pre-qualification criteria of NIT

Certificate that we have visited the site on and assessed the nature and amount of work involved before submitting our offer. We will be able to complete the works within the stipulated time and also that we will be able to execute the work suit to the site conditions.

(Signature of Bidder with Seal)

Name:

Address:

Date:

Consultant Engineer

CHECK-LIST FOR PRE-QUALIFICATION BID FOR: "NAME OF WORK: SITC of 3 nos. of 1.5 TR Split AC in TC - 4A at NIPGR Campus, New Delhi."

Sl. No.	Documents asked for	Page number at which document is placed
1.	Tender Cost	
2.	Earnest Money	
3.	Name of authorized person of the firm/agency, designation, address and office telephone numbers. If the bidder is a partnership firm/private or limited company, name designation, address and office telephone numbers of partners/ Directors also.	
4.	Undertaking on a Non-judicial Stamp Paper of ₹ 100/- (as per format prescribed in Annexure-I) after award of work.	
5.	Self-attested copy of the PAN card, issued by the Income Tax Department.	
6.	Self attested copy of Service Tax Registration, TIN and GST number.	
7.	Proof of experiences of last three years ending 31 st Aug. 2017 as specified in the NIT along with satisfactory performance certificates and work order copy from the concerned employers.	
8.	Annual turnover of last three financial years ending March 31, 2017 duly certified by the Statutory Auditors.	
9.	Authorization certificate issued by the Principals / OEM.	
10.	Any other documents, if required.	

Signature of the Bidder
(Name and Address of the Bidder)
Telephone No.

TERMS & CONDITIONS

Name of work: SITC of 3 nos. of 1.5 TR Split AC in TC - 4A at NIPGR Campus, New Delhi.

1. The site of work is at NIPGR Campus, Aruna Asaf Ali Marg, New Delhi – 110067 and contractor must visit site before quoting the rates and also sign the site visit certificate enclosed as per Annexure-II.
2. The rates are inclusive of Transportation, loading, unloading & handling charges and nothing extra will be paid.
3. The rates are inclusive of VAT, Service Tax, other taxes, octroi, etc., and nothing extra will be paid.
4. The contractor shall make his own arrangement for the security of material at site.
5. The contractor shall arrange all T&P and nothing extra will be paid.
6. The EMD of un-successful bidders shall be returned after issue of work order to lowest agency.
7. In case agency fails to comply with terms & conditions the EMD of the agency shall be forfeited.
8. The security deposit @ 10% shall be deducted from the bill and shall be refunded after completion of defect liability period.
9. No advance payment will be made.
10. Any damage to any existing installations during the execution of work shall be the responsibility of the contractor and will be made good to the satisfaction of the engineer-in-charge and nothing extra shall be paid.
11. Any kind of accident / electrocution caused due to negligence or during the course of normal work etc., shall be responsibility of the contractor. The contractor shall be responsible for all the compensation to the staff engaged by him.
12. All safety precautions shall be taken so as to avoid any accident or inconvenience to the members of the staff.
13. Acceptable makes of A/C units – Voltas / Blue Star / Hitachi / LG.
Acceptable makes of stabilizer – Blue bird / V-Guard/
14. All equipments shall be guaranteed for 12 months or for the period of standard guarantee / warranty offered by the manufacturer (whichever is later) from the date of completion & handover to the department. Against unsatisfactory performance and/or breakdown the equipment or component or any other part of the installation so found defective in guarantee period shall be replaced/repared by the contractor free of cost to the satisfaction of Engineer-in-Charge. Manufacturer's warranty shall also be submitted in original.
15. Any alteration / modification / Civil works shall be done free of cost by the contractor eg. Cutting & refixing of glass, breaking & repairing of wall in good manner etc.

16. The single phase / 3 phase electrical power shall be provided at nearest available D.B.. The agency shall create the power point for A.C.
17. Breaking of walls during the execution of work shall be made good as existing and nothing extra shall be paid.
18. In case the site clearance and damages are not attended, a recovery amounting to ₹ 10,000.00 (₹ Ten thousand only) shall be made.
19. The work shall be completed within 30 days after the date of issue of work order, if not recovery @ 1% per day subject to maximum of 10% of quoted amount if the work is not completed with stipulated time of completion.
20. The quotation must be accompanied with E.M.D. amounting to ₹ 10,100.00 (₹ Ten Thousand One Hundred Only) by way of Demand Draft drawn in favour of "DIRECTOR, NIPGR", New Delhi.
21. E.M.D. must be submitted in a separate envelope which will be opened first.
22. The material supplied shall be got approved by the Engineer-in-charge before installation and carrying out the work.
23. The water & electricity supply shall be given free of cost at one point.
24. Factory test reports of the machines shall be submitted before installation.
25. Warranty card issued by the manufacturer of machines installed will also be submitted with bill.
26. The tenderer must submit all the technical data, catalogue of equipments proposed by them to install with product code along with technical bid. If, the same is not submitted, their tender shall not be considered and the financial bid shall be opened only for those bidders whose catalogue / manuals are approved by the Institute.
27. The Institute also reserved the right to reduce / increase the scope of work.
28. Breaking of walls and damage to the painting during the execution of work shall be made good as existing & nothing extra shall be paid.
29. The colour of raceway shall be off white and agency must submit the sample before installation of the same.
30. The items marked (if required) in Schedule of Quantity shall only be executed, if required, during execution.
31. The agency shall provide cost of extended warranty (if available) separately in the Financial Bid so that, if required, Institute shall consider the same accordingly.
32. The electric supply shall be provided at single point to the nearest DB available in the room. Any electrical material such as electrical wire, MCB, MCCB, thimble, etc., not mentioned and required during evaluation of work shall not be paid extra.

PAN: _____

TIN: _____

Seal & Signature of Contractor

Consultant Engineer
NIPGR, New Delhi

FINANCIAL BID

Name of work: SITC of 3 nos. of 1.5 TR Split AC in TC - 4A at NIPGR Campus, New Delhi.

CLIENT : DIRECTOR NIPGR
NEW DELHI

SCHEDULE OF QUANTITY					
Name of work: S.I.T.C. of 3 nos. of 1.5 TR Split AC in TC - 4A at NIPGR, New Delhi.					
Sl. No.	Description	Unit	Qty.	Rate	Amount
1	SPLIT TYPE AIR CONDITIONER Make: VOLTAS/BLUESTAR/LG/CARRIER Specifications: S.I.T.C. of HI-wall Split AC Units capacity 1.5 TR (Nominal) with minimum 5000 watt fitted with Hermitically sealed Rotary compressor with all accessories i/c refrigerant gas (R-22/R-410), copper tubes and cable etc. complete for operating on 230 volts, 50Hz, single phase AC supply BEE Star rating 5 star complete with cordless remote control etc. complete as reqd.	Nos	3		
2	COPPER PIPING FOR SPLIT AC Make: MET TUBE/SUPERLON Specifications: Supply and fixing of copper refrigerant pipes of suitable size (suction as well as discharge pipe duly insulated with nitrile rubber having thickness of insulation 9mm on recess/surface etc. complete as required.	Mtrs.	25		
3	DRAIN PIPE FOR SPLIT AC Specifications: Supply and fixing of 25 mm dia (OD) drain pipe for AC condensation water drain complete with tee, elbow, socket, jointing etc. as reqd.	Mtrs.	15		
4	CABLING FOR SPLIT AC Make: FINOLEX/HAVELLS/POLYCAB Specifications: Supply and fixing of following size PVC insulated PVC sheathed copper conductor cable ISI marked of copper conductor 2.5 Sq.mm 3core on surface/recess complete as reqd.	Mtrs.	35		
5	ROOM TEMPERATURE CONTROLLER Specifications: Supply and fixing of Real time microprocessor based user programmable Controller i/c four digit LED display for displaying measured values and Feather touch operation., Platinum sensor probe Pt- 100 (class A, SI sensor, cable 5 m, max var $\pm 0.20^{\circ}\text{C}$, resistance standard 100 ohms, self heating error in $0^{\circ}\text{C}/\text{mW}$. 0.6 in flowing air V-1 m/s and 0.24°C in still air, Response time in moving air 50 % response in 6 sec. And 80 % response in 5 sec, Sensor failure indication Display 6.resolution 0.1°C . Accuracy $\pm 0.1^{\circ}\text{C}$. Automatic hysteresis 0.7°C . 4 Independent powered out put. One Heater and One Air conditioner auto selectable. Temperature Range - 0°C to 750°C . Input- 200-240 VAC, 50 Hz. Single phases. , Ambient 5°C - 50°C , RH upto 90%. Along with Switching Unit.	No.	1		
6	MICROCLIMATIC HUMIDITY CONTROLLER Specifications: Supply and installation of Real Time microprocessor based. On/Off control for Humidifying/ Dehumidifying. Hysteresis / Differential 1% - 9%. Direct / Reverse selectable Lock functions to prevent miss operating. Feathers touch operation. Sensor:- Fast response sensor – line resistance $< 10\Omega$ Display Accuracy- indicating value $\pm 0.2\%$ ± 1 digit. Input- 200-240 VAC, 50 Hz. Single phase. , Ambient 5°C - 50°C , RH upto 90%.	No.	1		

7	SEQUENTIAL TIMER Specifications: Supply and installation of Sequential Timer It must operate two air conditioners together and third AC each alternately directly from the powered output. Technical Specifications: - Minimum ON/OFF time 15 / 30 minutes. NICAD battery backup upto 90 Min. auto recharging facility. Powered output can drive Two 1.5/2 Ton Air conditioner Alternately Auto – Manual Selector switch. Accuracy ±8 sec/day. Input 200 V to 240 V.A.C, Phase-Single, 50 Hz. Ambient 5°C to 50°C, and RH upto 95%	No.	1		
8	HUMIDIFIER Specifications: Supply and installation Suitable floor mounting humidification system to maintain more than 90% RH at all specified temperatures at any point in the room. Humidification system may be of Pan-type humidifier with Electronic RH sensor or Ultrasonic Humidifier with Electronic RH sensor or Ultrasonic Humidifier with dehumidification via independent dehumidifying coil with reheat heaters or any other equivalent system which should maintain more than 90% RH at all specified temperatures at any point in the room. (Note: Reservoir for continuous supply of de-mineralized water to the humidification system along with suitable water demineralization system shall be provided by the department).	No.	2		
9	PHOTOPERIODIC TIMER Specifications: Supply and installation of Switches ON/OFF lights at the time set by user, despite power failures. Being digital, there are less moving parts, hence more reliable. Special feature. Technical: Photoperiodic repeat cycle 24 hrs minimum ON/OFF period 30 minutes. Backup auto recharging NICAD. Powered output directly drives upto 100 tube lights 40W each. Thermal safety with 15A cutout. Accuracy ±10 sec/day. Input: 200-240 VAC. Phase-singles. Ambient: 5° to 45°C, RH upto 85% normally. Weight 2Kg.	No.	1		
10	LIGHTING SYSTEM (IF REQUIRED) Make:PHILLIPS/HAVELLS Specifications: Supply and installation of 400W lamp should be resistant to high relative humidity (more than 90%). Lamps should be Sodium, fluorescent tubes or bulbs or LED, which gives balanced spectrum for plant growth well connected with Temperature Controller, Sequential Timer and Photoperiodic Controller; Enclosed in frame of mild sheet structured powder coated and subsequently painted with anticorrosive humidity resistant treatment or as per standard specification for quality grade	No.	6		
11	SWITCHING UNIT Specifications: Supply and installation of Switching unit for Air Conditioner, capable of functioning between at least 5 - 45°C and at up to 85% RH	No.	1		
12	AUTOMATIC VOLTAGE STABILIZER Make: V-GUARD/BLUE BIRD Specifications: Supply and installation of voltage stabilizer capacity 4KVA, Input Voltage : 190 –260 Volt Output Voltage : 220Volt ± 10% Frequency : 50 Hz Mode of Operation Auto/Manual Selectable Duty Cycle : Continuous on full load	No.	3		
13	MS-ANGLE IRON STAND FOR AC Specifications: Supply and installation of prefabricated wall /floor mounted stand as per site requirement for outdoor unit of 1.5 TR capacity split AC duly powder coated i/x cement concrete foundation of suitable strength for placing the outdoor unit.	No.	3		

[illegible]