

TENDER
FOR
SUPPLY, INSTALLATION, TESTING AND
COMMISSIONING OF DUCTABLE AHU &
CASSETTE TYPE AIR CONDITIONING SYSTEM,
HEAD OFFICE, PUNJAB NATIONAL BANK,
DWARKA, PLOT NO 4,
SECTOR -10, NEW DELHI 110075

GSAD, HEAD OFFICE,
PUNJAB NATIONAL BANK
PLOT NO 4, SECTOR – 10,
DWARKA, NEW DELHI –110075.
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Supply, Installation, Testing and Commissioning of Ductable AHU & Cassette Type Air Conditioning System, Head Office, Punjab National Bank, Dwarka, Plot No 4, Sector -10, New Delhi 110075.

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1. Bid Details

1.	Tender Reference	HO/B&C/ AC/2019/01
2.	Date of commencement of Tender download	03.07.2019 from 1000 hrs
3.	Last date and time of acceptance of queries	08.07.2019 till 1700 hrs
5.	Last date and time downloading tender	23.07.2019 till 1500 hrs
6.	Bid preparation and Hash Submission	23.07.2019 till 1500 hrs
7.	Close for Technical and Commercial Bid	23.07.2019 till 1500 hrs to 1600 hrs
8.	Last Date for Bid Submission and re-encryption	23.07.2019 – 1601 Hrs to 24.07.2019 till 1400 hrs.
9.	EMD & Technical Bid opening	24.07.2019 from 1500 hrs
10.	Cost of Tender Document	Rs. 2,360/- (non refundable) in the form of Demand Draft in favour of Punjab National Bank.
11.	Earnest Money Deposit Amount	Rs. 21,000/- (Rupees Twenty One Thousand only) in the form of Demand Draft in favour of Punjab National Bank. EMD should be submitted along with Technical Bid.
12.	Estimated Cost of Project	Rs. 20,80,528.00 (Rupees Twenty Lacs Eighty Thousand Five Hundred Twenty Eight only) including GST.
13.	Place of opening of Bids	Punjab National Bank, Head Office, 1 st Floor, GSAD, Plot No 4, Sector -10, Dwarka, New Delhi 110075
14.	Contact Details	Chief Manager Punjab National Bank, Head Office, 1 st Floor, GSAD, Plot No 4, Sector -10, Dwarka, New Delhi 110075 Ph: 28075391/ 28044402 Email: soumya@pnb.co.in maintenance@pnb.co.in

Bank shall follow the e-procurement process. Complete details of requirements for participation in e-procurement process are available on the Website of Punjab National Bank <https://etender.pnbnet.in>. **It is mandatory for the bidder to get himself registered on bank's Website for submission of online bids.**

2. Purpose of Tender

Head Office of Punjab National Bank is located at Plot No 4, Sector -10, Dwarka, New Delhi 110075. The tender work shall be executed in few of the office areas of the building as alternate air conditioning arrangement to the present arrangement of centralized air conditioning system. Therefore, the proposed new ductable AHU equipment is to be connected/ integrated with the existing ducting system for normal/ alternate operation & Cassette AC shall be operated as independent unit for normal operation.

PUNJAB NATIONAL BANK

3. **Eligibility Criteria**

a. The Bidder should possess the requisite experience, resources and capabilities in providing the services necessary to meet the requirements, as described herein. The Bidder should also possess the technical know-how and the financial wherewithal that would be required to execute the scope of work. The Bid must be complete in all respects and should cover the entire scope of work as stipulated in the document. Bidders not meeting the Eligibility Criteria will not be considered for further evaluation.

b. The bid is open to OEM, OEM authorized vendors/ dealers/ contractors proficient in the field of SITC of Ductable/ Packaged/ VRF type Air Conditioning system.

c. The proposal not complying with minimum eligibility criteria, as enumerated below, will be rejected summarily and will not be considered for evaluation of technical bid. The proposal should adhere to following eligibility criteria :

<u>S. No</u>	<u>Minimum Eligibility Criteria</u>	<u>Documents to be Submitted for Proof</u>
1.	The Bidder should be OEM or OEM authorized vendors/ dealers/ contractors proficient in the field of SITC of Ductable/ Packaged Air Conditioning system for a minimum period of 3 years as on 30 Jun 2019.	Valid authorization/ dealership letter from the OEM of recommended makes mentioned in this document shall be submitted by the vendors/ dealers/ contractors. OEM is not required to submit this document.
2.	<p>a. The bidder should have satisfactorily completed either of following (SI i – iii) similar works during last 7 (seven) years ending last day of the month of Jun 2019.</p> <p>i. One work of similar work costing not less than the amount equal to Rs 16,64,422/-</p> <p style="text-align: center;">OR</p> <p>ii. Two works of work of similar work</p>	Work order copies along with the completion certificates from the client.

	costing each not less than the amount equal to Rs.10,40,264/- OR iii. Three works of work of similar work costing each not less than the amount equal to Rs.8,32,211/- Similar Work for above: Supply, Installation, Testing, Commissioning of Packaged/ Ductable/ VRF type system under single contract agreement.	
3.	The applicant should be an assessee of Income Tax and must possess GST No.	Copy of the latest income tax return, PAN, GST Registration Certificate.
4.	The minimum average annual turnover of Bidder for the last three financial years i.e. 2015-16, 2016-17, 2017-18 must not be less than Rs. 6,24,158/- Bidder has to upload audited Balance sheet and Profit & Loss statement details for these financial years.	1) Audited Balance Sheet and P & L Account for the three years mentioned. 2) Certificate from Chartered Accountant certifying the turnover of last three financial years i.e. 2015-16, 2016-17, 2017-18
5.	The bidder should not have been black-listed/ barred by any Public Sector Bank, RBI or IBA or any other Government/PSU agencies.	An undertaking in this regard is to be submitted to Bank by Bidder.

- a. Proposal of vendor who do not fulfil the above criteria or who fail to submit documentary evidence thereon would be rejected.
- b. The Bidder has to upload scanned and legible copies of all the supporting documents on e-procurement Website of the bank i.e. <https://etender.pnbnnet.in> for its scrutiny.
- c. The Bank reserves the right to independently verify the authenticity of the documents submitted/ claims made by the bidder, and may also ask for presenting the original copy of the submitted document(s). Further, on such verification, if it is found that the bidder has made false claims, submitted forged documents, etc., the bid shall be liable for outright rejection, notwithstanding other rights available under the tendered Terms and Conditions for taking actions against the bidder, as deemed fit by the Bank.
- d. The Bank reserves the right to seek for any additional information from participated bidders after opening bids in support of eligibility criteria by giving maximum time of 7 calendar days (Bank has discretion to decrease or increase

the time period) and also reserves the right to reject or accept the bid of a bidder, if in the opinion of Bank the qualification data is incomplete or the bidder is found not qualified to satisfactorily execute the requirements of the project and no communication shall be entertained in this regard in future.

- e. The bidder shall have to furnish an affidavit duly notarized as under :

“I/We undertake and confirm that eligible similar work(s) has/have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of the Bank, then I/we shall be debarred for bidding in PNB in future forever. Also, if such violation comes to the notice of the Bank before date of start of work, the Bank shall be at liberty to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.”

4. Notice Inviting Tender

- a. E-Tenders are invited on item rate basis on behalf of Punjab National Bank from OEM, OEM authorized experienced/ reputed vendor/ contractor of OEM, OEM authorized vendors/ dealers/ contractors proficient in the field of SITC of Ductable/ Packaged/ VRF type Air Conditioning system, who fulfil the eligibility criteria mentioned in the tender documents for **Supply, Installation, Testing and Commissioning of Ductable & Cassette Air Conditioning System, Head Office, Punjab National Bank, Dwarka, Plot No 4, Sector -10, New Delhi 110075** against Payment of Rs.2360/- (Rs.2,000/- + GST of 18%) (non refundable towards cost of tender), in two envelope system containing (1) Technical Bid (2) Commercial bid. Tender purchase fee of Rs. 2,360/- may be submitted in form of demand draft in a separate envelope with EMD. Commercial bid shall be submitted online.
- b. The Bidders intending to participate in this tender are required to get enrolled on the Bank's website i.e. <https://etender.pnbnnet.in>. Enrolment on the above mentioned website is mandatory.
- c. As the bids of the Bidders have to be digitally signed by the Digital Certificate of the respective Bidder before submitting the bids online, the bidders are advised to obtain Digital Certificates in order to bid for the tender.
- d. The Tender Documents containing detailed terms & conditions can be downloaded online directly from the portal www.pnbindia.in / <https://etender.pnbnnet.in> as per tender schedule attached and shall be submitted online.
- e. All the bidders are required to submit Demand Draft in favour of Punjab National Bank of Rs. 2,360/- towards the cost of tender document by **24.07.2019** till **14:00hrs**.
- f. Bidders may submit their queries regarding any technical clarification before **08.07.2019** up to 17:00Hrs. No queries shall be entertained after last dated fixed for acceptance of queries.
- g. Standardized documents may be downloaded from the "Corrigendum / Addendums" section of the abovementioned portal up to 1200 hrs on **22.07.2019** after clarification on queries.
- h. Based on the clarification of conditions by the Bank, the intending bidder will submit their unconditional acceptance on the prescribed format along with tender document.
- i. Commercial bid of only those bidders shall be opened who bring their tender in line with requirements of tender documents and are acceptable to the Bank and the bidder who do not submit the EMD in the form of Bank draft, their tenders will be summarily rejected.

j. First E.M.D. Envelope will be opened, and if the hard copy of the same is received on time i.e. up to **14:00 hrs on 24.07.2019** only then technical bid will be opened online. Hard copy i.e. the Demand Draft in favour of Punjab National Bank for an amount of Rs.21,000/- towards EMD is to be submitted physically by the bidder in the office of the Chief Manager, Punjab National Bank, Head Office, 1st Floor, 'A' Wing, GSAD, Plot No 4, Sector -10, Dwarka, New Delhi 110075.

k. The commercial bid of technically eligible bidder who meets the eligibility criteria stipulated in tender documents will be opened online in the presence of participated or representatives of participated bidders as per the schedule attached. Date for opening of commercial bids will be intimated later.

l. The Tenders shall be valid for a period of not less than 90 days after the date of opening of commercial bid online.

- Last date for downloading the tender document (as per tender schedule).
- Last date for Bid Preparation and Hash Submission (as per tender schedule).
- Last date for submission of bids on line and re-encryption (as per tender schedule).

Please note that bid preparation and hash submission are compulsory activities, failing which bidder will not be able to submit the bids online.

For any further information/ Queries Bidder may contact Chief Manager (E), Punjab National Bank, Head Office, 1st Floor, GSAD, Plot No 4, Sector -10, Dwarka, New Delhi 110075 Ph:011-28075391/ 28044402, email Id: soumya@pnb.co.in m.thiyagarajan@pnb.co.in. maintenance@pnb.co.in The Bank reserves the right to accept/reject any or all the offers submitted in response to this advertisement without assigning any reason whatsoever.

m. The Bank reserves the right to postpone or cancel the bidding process at any time at the sole discretion of the Bank without assigning any reason whatsoever.

n. The Bank will not be bound to accept the lowest tender and reserves the right to accept or reject any or all the tenders without assigning any reasons whatsoever.

o. Please note that, on tendering procedure through the electronic tendering system refer to the Instructions for using the Electronic Tendering System document available along with the tender documents on <https://etender.pnbnet.in>.

p. The unit price is to be filled by the bidder with due calculation. In case of any error in calculation of total rate, then unit price will be taken for determining the total rate.

Chief Manager

5. Letter Submitting Tender

Chief Manager
Punjab National Bank, Head Office,
1st Floor, GSAD, Plot No 4, Sector -10,
Dwarka, New Delhi 110075
Ph: 28075391/ 28044402

Reg: Supply, Installation, Testing and Commissioning of Ductable & Cassette Air Conditioning System, Head Office, Punjab National Bank, Dwarka, Plot no 4, Sector -10, New Delhi 110075.

Dear Sir,

1. Having examined the General Conditions of Contract, Special Conditions of Contract, Technical Specifications and Schedule of Quantities for the execution of the above named works, we offer to complete and maintain the whole of the said works in conformity with the said conditions of contract, specifications and schedule of quantities for the sum stated in schedule of quantities of this Tender Document or such other sum as may be ascertained in accordance with the said conditions of contract.
2. We undertake to complete and deliver the whole of the works comprised in the contract within the time stated in the appendix hereto.
3. We have independently considered the amount of liquidated damages shown in the Appendix to form of tender hereto and agree that it represents a fair estimate of the loss likely to be suffered, by you in the event of the works not being completed in time.
4. We agree to abide by this tender for the period of 90 days from opening of Commercial Bid or extension there of as required by the PNB from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiry of that period.
5. We confirm that the period and rates as referred in the agreement or general conditions of contract are given or summarized in the appendix hereto, to which we give our consent and agree to abide by the same.
6. We understand that if our tender is accepted, we are to be jointly and severally responsible for the due performance of the contract.
7. We understand that you are not bound to accept the lowest or any tender you may receive and may reject all or any tender, accept or entrust the entire work to the Contractor without assigning any reason or giving any explanation whatsoever.

8. I/we have deposited Earnest Money Rs.21,000/- by demand draft which amount is not to bear any interest. I/we do hereby agree that this sum shall be forfeited by you in the event our tender is accepted and I/we fail to execute the contract when called upon to do so.

Dated this day of _____ 2019.

Signature _____ in the capacity of _____ duly authorized to sign tenders for and on behalf of _____. (IN CAPITALS)

Tender submitted on _____ before _____ P.M.

6. Appendix to Form of Tender

1.	Period of Contract	37 days from date of Award of Work.
2.	Date of commencement	Work shall be commenced within 07 days from the date of award of work/ written orders given by the Bank.
3.	Initial Security Deposit	2% of the accepted value of the tender by means of Performance Bank Guarantee/ Demand Draft.
4.	Payment	Payment shall be processed as per conditions mentioned in Clause 21 of GCC.

7. GENERAL CONDITIONS OF CONTRACT (GCC)

Except where provided for in the description of the individual items in the Schedule of Quantities and in the specification & conditions laid down herein after, the work shall be carried as per standard specifications and under the directions of the PNB.

1. Interpretation

In construing these conditions, the specifications, the schedule of quantities, tender and agreement, the following words shall have the meaning herein assigned to them except where the subject of context otherwise requires :

- i. **Employer:** The term employer shall denote PNB/ Punjab National Bank with the Head Office, 1st floor, GSAD, Plot No 4, Sector – 10, Dwarka, New Delhi, 110075 and any of the PNB's employees or representative authorized to act on their behalf.
- ii. **The Bank:** The term Bank shall mean Punjab National Bank/ PNB.
- iii. **The In charge:** The term means any Staff (temporary or permanent) of the Bank deployed to look after the work.
- iv. **Contractor/ Successful Bidder:** The term Contractor shall mean, successful bidder M/S ----- (name and address of the Contractor) and his/their heirs, legal representative assigns and successors.
- v. **Site:** The site shall mean Head Office, Punjab National Bank, Plot No 4, Sector – 10, Dwarka, New Delhi, 110075.
- vi. **Specifications:** The work is to be carried out in accordance with Specifications, the Schedule of Quantities which may be supplied, or any other instruction, which may be given by the PNB during the execution of the work.
- vii. The Successful Bidder shall ask in writing for all clarifications in respect of Specifications and Schedule of Quantities or to additional instructions at least 10 days ahead from the time when it is required for implementations so that the PNB may be able to give decision thereon.
- viii. "The Work" shall mean the work or works to be executed or done under this contract.

- ix. "Act of Insolvency" shall mean any act as defined by Insolvency and Bankruptcy Code, 2016.
- x. "The Schedule of Quantities" shall mean the schedule of quantities as specified and forming part of this contract.
- xi. Order of precedence for any ambiguity in the schedule of quantities, general conditions, special conditions and specifications for the Contractor shall be as per the decision of the PNB and the same will be binding on the Contractor, and shall be read as under in the decreasing order of importance.
 - a. Schedule of Quantities.
 - b. Special Conditions.
 - c. General Conditions.
 - d. Standard (Technical) Specifications of Contract.
 - e. C.P.W.D specifications.
 - f. BEE Specifications/ Guidelines
 - g. Bureau of Indian Standards/ specifications.
 - h. State P.W.D/ General Engineering Practice.

Note: Any ambiguity observed shall be brought to the notice of PNB and be executed after obtaining approval from the PNB. In case of any ambiguity between the above, the most stringent will follow.

2. Description of Work

2.1 The work consists of Supply, Installation, Testing and Commissioning of Ductable Air Conditioning System, Head Office, Punjab National Bank, Dwarka, Plot no 4, Sector -10, New Delhi 110075 at fifth floor of the building. The contractor shall be responsible for its functioning according to the design criteria and its parameters. Notwithstanding the details furnished, any discrepancies shall be brought out in the technical bid highlighting the shortcomings and suggest modifications. The detailed scope of work is mentioned in the 'Technical Specification' section.

2.2 The successful bidder is responsible for design & successful integration/ commissioning of the proposed equipments and their concept of functioning. Therefore, any issue in the concept of this tender shall be brought to the Bank's notice before bidding/ scheduled time for submission of queries. Any issue arising during the execution should be resolved at quoted cost by the bidder without attempting to pinpoint the discrepancies in the BOQ/ tender thereafter. Bank's decision is final in such matters.

2.3 The work to be carried out under the contract shall, except as otherwise provided in these conditions, include all labour, materials, tools, plants, equipment and transport which may be required in preparation of and for and in the full and entire execution and completion of the works.

2.4 The descriptions given in the Schedule/ Bill of Quantities shall, unless otherwise stated, be held to include wastage on material, carriage and cartage, carrying and return of empties, hoisting, setting, fitting and fixing in position and all other labour necessary and for the full and entire execution and completion as aforesaid in accordance with good engineering practice and recognized principles.

2.5 If there are varying or conflicting provisions made in any one or more document(s) forming part of the contract, the Accepting Authority shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on contractor.

2.6 Any error in description or quantity or rate in Schedule of Quantities or any omission there from shall not vitiate the Contract or release the contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the Contract.

2.7 The contractor shall forthwith comply with and duly execute any work comprised in such Employer's instruction, provided always that verbal instructions, directions and explanations given to the contractor's or his representative upon the works by the Employer shall, if involving a variation be confirmed in writing to the contractor/s within 3 days.

2.8 No work for which rates are not specifically mentioned in the priced schedule of quantities, shall be taken up without written permission of the Employer. Rates of items not mentioned in the priced schedule of quantities shall be fixed by the Employer as per prevailing market rates.

2.9 Regarding all factory made products, they shall be manufactured as per their respective IS code updated and all test undertaken at factory.

3. Facilities to be Provided by the Contractor

3.1 The contractor shall provide everything necessary for the proper execution of the work according to the intent and meaning of the design parameters, technical specifications, drawings and schedule of quantities. Based on the details furnished in the NIT, the contractors should undertake their own assessment and design the plant and system required. If the contractor finds any discrepancies, it should immediately be brought to the notice of the Bank.

3.2 The tenderer shall take full responsibility for adequacy, suitability and safety of all the design, works and methods of design/ installation.

3.3 The Bank shall on no account be responsible for the expenses incurred by the contractor during the progress of work at site, towards any incidental expenditure like medical amenities to the workers at site, security arrangement etc. The Bank shall not be responsible for the safety of the workers at site either on account of the works executed by the contractor or on account of the works executed by any other agency involved at that time.

3.4 The Employer on no account shall be responsible for storage of materials or loss or pilferage or theft either in respect of the material stored or material already built and paid for by the Bank.

3.5 The contractor shall at all times give access to workers employed by the Bank.

3.6 All tools, equipments and other required facilities for execution of work shall be provided by the contractor.

3.7 Any facilities available at site shall be utilised only with prior permission of the Bank or the in-charge of the site and cannot be taken as granted and for such services and utilities, the Bank is entitled to charge at his discretion.

3.8 Contractor shall provide and maintain all measuring instruments, including steel tape at all time for properly carrying out the work and for the use of the employer including employing skilled attendants and site engineer at site.

3.9 No extra charges shall be paid over and above what has been quoted for any of the above or for similar such services.

4. Tools, Storage of Materials, Protective Works and Site Office Requirements

4.1 The contractor shall not fix or place any placards or advertisement of any description or permit the same to be fixed or placed in or upon any hoarding, gantry, building structure other than those approved by the Bank. No fixtures or materials to be placed in such a manner that can be considered dangerous to the installation and to the persons working or passing by or visiting the site or occupants.

4.2 **Storage of materials:** The contractors shall make use of existing facilities with due permission of the Bank for storage of materials at site, but watch & ward arrangements for the safety of materials shall be the responsibility of the contractor.

5. **Period of Contract:** The contract period for the said work is 37 days (including commissioning works) after date of award of work which includes 7 days time period

given for acceptance of work. Therefore, the contractor should ensure all orders for equipments are timely placed especially for AHU, control kit and outdoor unit to manage the lead time and complete the project within stipulated timelines. **The work is to be undertaken only in holidays of the Bank after obtaining written approval/ work permit from the Bank as these areas are functional and occupied by top executives of the Bank.** Warranty of the system/ equipment is to be provided for one year from the date of completion of work signed by the Bank.

6. The contractor shall forthwith comply with and duly execute all work comprised as per the Bank's or its representative's instructions, provided always that verbal instructions, directions and explanations given to the contractor's or his representative.

7. **Notice and Patents of Appropriate Authority and Owners**

7.1 The successful bidder shall indemnify the PNB against all claims in respect of patent rights, royalties, and damages to buildings, roads or member of public in course of execution of work and shall defend all actions arising from such claims and shall keep the PNB saved harmless and indemnified in all respects from such actions, costs and expenses.

7.2 The contractor shall conform to the provisions of any Acts of the Legislature relating to the work, and to the regulations and bye-laws of any authorities, and or other Companies (Indian or International), and/ or Statutory Authorities, with whose system and design or technical knowhow are/were proposed to have connection with this work. Also the contractor shall before making any variations from the drawings or specification that may be associated to so conform, give the Employer written notices specifying the variations proposed to be made and the reasons for making them and apply for instruction thereon. The Employer on receipt of such intimation shall give a decision within a reasonable time.

7.3 The contractor shall arrange to give all notices required for by the said Acts, regulations or Bye-laws to be given to any authority, and to pay to such authority or to any public officer all fees that may be properly chargeable in respect of the work and lodge the receipts with the Employer.

7.4 The contractor shall indemnify the Employer against all claims in respect of patent rights, royalties, damages to buildings, roads or members of public in course of execution of work and shall defend all actions arising from such claims and shall keep the Employer aloof and indemnified in all respects from such actions, cost and expenses.

8. **Clearing Site and Setting out Works:** The site of work shown shall be cleared of all obstructions, waste materials, and rubbish of all kinds. All material

damages on the place of work on the walls, ceiling or flooring or any other connected equipments, materials or installations shall be re-done to maintain the originality and levelled at the contractor's own cost. Thorough cleaning of work shall be undertaken on completion of everyday work as the areas are fully functional.

9. **Disposal of Dangerous/ Waste Materials:** All waste materials and other matters of any offensive nature shall be taken out once the works are completed. The contractor shall keep the works free from dangerous materials like industrial gases, welding machines and any such devices or material of toxic and poisonous nature shall not carry within the site or building any material that are explosive in nature. Any such offensive materials which are essentially required in course of work shall be undertaken with due written permission of the Bank provided such materials are permissible under Law.

10. **Access:** Any authorized representatives of the Bank shall have to be provided free access to the works and/ or to the workshops, factories or other places where materials or equipments are being prepared or constructed for the work and also to any place where the materials are lying or from where they are being obtained, and the contractor shall extend necessary facilities to the Bank or their representatives for inspection, examination & testing of the quality & workmanship of the materials.

11. **Materials, Workmanship, Samples and Testing of Materials**

11.1 All the works specified and provided for in the specifications or which may be required to be done in order to perform and complete any part thereof shall be executed in the best and most workmanlike manner with materials of the best and approved quality of the respective kinds in accordance with the particulars contained in and implied by the specifications and as represented by the drawings or according to such other additional particulars, and instructions as may from time to time be given by the Employer during the execution of the work, and to his entire satisfaction.

11.2 If required by the Bank the contractor shall have to carry out tests on materials and workmanship in approved material testing laboratories or as prescribed by the Employer at his own cost to prove that the materials etc. under test conform to relevant Bureau of Indian Standards and/ or as specified in the specifications. The necessary charges for sample material, transporting, testing etc. shall have to be borne by the contractor.

11.3 All material must be the best of their kind available and the contractors must be entirely responsible for the proper and efficient carrying out of the work. Samples of all the materials to be used must be submitted to the Bank when so directed by the Bank.

11.4 Should the work be suspended by any reason, the contractor shall take all precautions necessary for the protection of work and at his own expenses shall make good any damages arising from any of these causes.

12. **Removal of Improper Work:** In case the contractor refuses to comply with the order the Bank shall have the power to employ and pay other agencies to carry out the work and all expenses consequent thereon or incidental hereto as certified by the Bank shall be borne by the contractor or may be deducted from any money due to or that may become due to the contractor. No certificate that may be given by the employer, shall relieve the contractor from his liability in respect of unsound work or bad materials or design.

13. **Contractor's Employees** The contractor shall employ technically qualified and competent supervisors for the work who shall be available (by turn) throughout the work and shall participate during site meetings and be available to take and comply with instructions of the Bank.

14. **No Child Labour** No labour below the age of eighteen years shall be employed on the work. In case of electrical works, the labour employed by the tenderer or their sub- contractor should be authorized person as permitted by the Chief Electrical Inspectorate office of the respective State Government. The Employer shall not be responsible for any deviation and the tenderers shall indemnify the Bank from any legal action or in any way directly or indirectly.

15. **Labour Legislation** The tenderer shall comply with the provisions of the payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefits Act, 1961, and the Contractors Labour (Regulation and Abolition) Act 1970, or the modifications thereof or any other laws relating thereto and the rules made there under from time to time.

15.1 The tenderer shall, notwithstanding the provisions of any contract to the contrary, cause to be paid fair wage to labour indirectly engaged on the work, including any labour engaged by his sub-contractors in connection with the said work, as if the labour had been immediately employed by him.

15.2 The tenderer shall indemnify and keep indemnified the Employer against payments to be made under and for the observance of the laws aforesaid and the Contractors' Labour Regulations without prejudice to his right to claim indemnify from his sub-contractors. The laws aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a breach of this contract.

16. **Compliance of Labour Regulations**

16.1 The Tenderer shall at his own expense arrange for all the safety provisions for the safety of all workers and employees directly or indirectly employed on the work by the tenderer or his sub-contractors.

16.2 The Tenderer shall be fully responsible for compliance at his own expense all the labour regulations and rules to be observed by him and his sub-contractors and by the Employer as Principal Employer of workers. The Tenderer shall fully indemnify the Employer against any action by the state and/ or Central Government for any default or alleged default by the Tenderer, Sub-contractor or Employer of any of such rules and regulations. If, due to any default of the tenderer or his sub-contractors, the Employer has to incur any expenditure for compliance of the rules and regulations or for any other reason connected with such default, the Employer shall be entitled to recover from the tenderer all such expenditure in full from any payment due to the tenderer.

17. **Dismissal of Workmen** The contractor shall on request of the Employer immediately dismiss or take off from the works, any person employed thereon by him, who may in the opinion of the employer, be unsuitable or incompetent or who may misconduct himself. Such discharge shall not be the basis of any claim for compensation or damages against the Employer or any of their officers or employee.

18. **Assignment** The whole of the works included in the contract shall be executed by the contractor and the contractor shall not directly or indirectly transfer, assign or underlet the contract or any part, share or interest therein nor, change in constitution and no subletting shall relieve the contractor from the full and entire responsibility of the contract or from active superintendence of the work during their progress.

19. **Damage to Persons, Workmen and Property**

19.1 The Bidder shall be responsible for all injury to the worker or workmen or persons, animals or things and for all damages to the building /part of the building,

materials, equipment, structural and / or decorative part of property/property in the vicinity which may arise from the operations/installation or neglect of himself or employees whether such injury or damage arise from carelessness, accident or any other cause whatsoever in any way connected with the carrying out of this contract/performing the work.

19.2 The Bidder shall indemnify the PNB and hold harmless in respect of all and any expenses arising from any such injury or damages to persons or property as aforesaid and also in respect of any claim made in respect of injury or damage under any acts of compensation or damage consequent upon such claim.

19.3 The Bidder shall reinstate, rectify and remedy all damages of every sort mentioned in this clause so as to deliver the whole of the contract works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damages to the property.

20. **Accounts Receipts & Vouchers** The contractor shall, upon the request of the Employer furnish them with all the invoices, accounts, receipts and other vouchers that they may require in connection with the works under this contract. If the contractor shall use materials less than what is required under the contract, the value of the difference in the quantity of the materials that was required to use and that actually used shall be deducted from his dues. The decision of the Employer shall be final and binding on the contractor as to the amount of materials the contractor is required to use for any work under this contract.

21. **Payment Terms** : Payment shall be released in one go after completion of work within 15 days from the date of submission of original invoice subject to executing the satisfactory work and submission of the following documents. 2% of awarded work value submitted as Initial Security Deposit will be released after satisfactory completion of work. 8% of equipment cost portion shall be withheld and released after 1 year of warranty/ defect liability period.

- i. Original Invoice & Measurement sheet signed by the Bank.
- ii. Trials Report with satisfactory performance.
- iii. Submission of Warranty Certificates & technical documents, operational manuals etc.

22. **Escalation** The rate quoted shall be firm throughout the tenure of the contract i.e. for 37 days (including extension of time, if any granted) and till the completion of work and will not be subject to any fluctuation due to increase in cost of materials, labour, GST, etc. unless specifically provided in these documents.

23. **Idle Labour** Whatever the reasons may be, no claim for idle labour, additional establishment cost of hire and labour charges of tools and plants would be entertained under any circumstances.

24. **Visit of Site**

Intending Bidder shall visit the site to understand the scope of work involving for executing the work in the Bank's premises and make self thoroughly acquainted with the local site conditions, orientation & functioning of equipments/ systems, nature and requirements of the works, facilities of transport conditions, effective labour and materials, accesses and storage for materials. The successful Bidder will not be entitled to any claim of compensation for difficulties faced or losses incurred on account of any site conditions.

25. **Tenders**

25.1 The e-tender should be submitted by bidder duly priced and also digitally signed. The Schedule of Quantities shall be filled in as follows:

- a. The price of unit rate shall be quoted for Supply, Installation, Testing and Commissioning of Ductable & Cassette Air Conditioning System, Head Office, Punjab National Bank, Dwarka, Plot no 4, Sector -10, New Delhi 110075.
- b. The PNB reserves the right to reject the lowest or any tender.
- c. The language for tender shall be ENGLISH and the total amount tendered should be written in the same language only in the currency of INR.

25.2 The Bank reserves the right to accept the tender in full or in part and the bidder shall have no claim for revision of rate or other conditions if his tender is accepted in parts. Any error on the part of the bidder while quoting the rates will not be accepted as an excuse for refusal to execute the order for any or all items, if order is placed on the basis of the quoted rates. For refusal of the order, the E.M.D. of the bidder will be forfeited.

25.3. The bidder shall note that his tender shall remain open for consideration for a period of 90 days from the date of opening of the tender (Commercial Bid).

25.4 **Agreement** The successful Contractor shall be required to sign agreement and shall pay for all stamps and legal expenses, incidental thereto.

25.5 **Amendment of Bidding Documents by the Bank** At any time prior to the last Date and Time for submission of bids, the Bank may, without assigning any reason

whatsoever, modify the Bidding Documents through amendments at the sole discretion of the Bank. All amendments shall be uploaded on the Bank's websites (www.pnbindia.in and <https://etender.pnbnnet.in>) and shall be binding on all Bidders. In order to provide prospective Bidders a reasonable time to take the amendment if any, into account in preparing their bid, the Bank may, at its discretion, extend the deadline for submission of bids.

25.6 Modification and Withdrawal of Bid by the bidder

25.6.1 Modification of the submitted bid shall be allowed on-line and the bidder may modify and resubmit the bid on-line only before the deadline of Bid Hash Preparation. For modification of e-bid, bidder has to rework and upload/resubmit digitally signed modified bid on bank's e-tendering portal i.e. <https://etender.pnbnnet.in>.

25.6.2 No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of period of bid validity specified in tender documents. For withdrawal of bid after the end date of bid submission, the bidder will have to make a request in writing to Tender Inviting Authority of Bank. Withdrawal of bid may be allowed till issue of work order with the following provision of penal action:

25.6.3 If the request of withdrawal is received before informing the date for opening of commercial bid, the EMD submitted by bidder will be forfeited and bidder will be debarred for 6 months from participating in tenders in PNB. The commercial bid of remaining technically qualified bidders will be opened and the tender process shall go on.

25.6.4 If the request of withdrawal is received after informing the date for opening of commercial bid, the EMD submitted by bidder will be forfeited and bidder will be debarred for 1 year from participating in tenders in PNB. The commercial bid of all technically qualified bidders including this bidder (if found technically eligible) will be opened and action will follow as under:

- a) If the bidder withdrawing his bid is other than L-1, the tender process shall go on.
- b) If the bidder withdrawing his bid is L-1, the re-tender will be done.

25.7 **Contacting the Bank** Any effort by a bidder to influence the Bank in evaluation of the bid, bid comparison or contract award decision may result in the rejection of the Bidders' bid. Bank's decision will be final and without prejudice and will be binding on all parties.

25.8 **Clarifications of Bids** To assist in the examination, evaluation and comparison of bids the Bank may, at its discretion, ask the bidder for clarification. The response should be in writing and no change in the price or substance of the bid shall be sought, offered or permitted.

25.9 **Earnest Money and Security Deposit**

25.9.1 The bidder will have to deposit an amount of Rs. 21,000.00 (Rupees Twenty One Thousand only) in the form of Bank draft drawn in favour of Punjab National Bank at the time of submission of tender as an Earnest Money. The PNB is not liable to pay any interest on the Earnest Money. The Earnest Money of the unsuccessful bidders will be refunded without any interest soon after the decision to award the work is taken.

25.9.2 The successful bidder/ contractor shall submit security deposit, amounting to 2% of awarded work value covering the entire period of the contract. The security deposit will be released as payment clause.

26. **Government and Local Rules**

The Contractor shall confirm to the provisions of all local Bye-laws and acts relating to the work and to the regulations etc. of the Government and local authorities and of any company with whose purview the work proposed to be governed. The Contractor shall give all notices required by said act, rules, regulations and Bye- laws etc. and pay all fees payable to such authorities for execution of the work involved. The cost if any shall be deemed to have been included in his quoted rates, taking into account all liabilities etc. He shall indemnify the PNB against such liabilities and shall defend all actions arising from such claims or liabilities.

27. **Taxes and Duties**. The bidders must quote their tender prices including the prevailing rate of GST or any other cess or local charges, as may be applicable at present rate. However, tax shall be deducted at source at the specific rate of Central Government regulations and guidelines respectively, if applicable. The certificate in respect of TDS shall be issued by the Bank as per rule. Any variation in taxes and duties and/or imposing any new taxes and duties during currency of contractor extended period, i.e. only the difference in tax, shall be borne by the Bank. No claim whatsoever on this account shall be entertained.

28. **Other Persons Engaged by the PNB**

The PNB reserves the right to execute any part of the work included in this contract or any work which is not included in this contract by other agency or persons and Contractor shall allow all reasonable facilities.

29. **Disputes and Arbitration**

- a. All disputes or differences, whatsoever, arising between the parties out of or in relation to the terms and conditions, meaning and operation or effect of this Tender/Agreement or breach thereof shall be settled amicably.
- b. In case they are not able to settle the disputes or differences between them amicably, the matter may be referred to a sole arbitrator mutually agreed upon after issue of at least 30 days notice in writing to the other party clearly setting out there in the specific disputes and the same shall be settled by arbitration in accordance with the Indian Laws relating to arbitration, i.e. in accordance with the provision of the Indian Arbitration and Conciliation Act, 1996 and the award made in pursuance thereof shall be binding on the parties.
- c. In the event of absence of consensus about a single arbitrator, the dispute may be referred to three arbitrators, one to be nominated by each party and the said arbitrators shall appoint the third presiding arbitrator before commencing the arbitration proceedings.
- d. The venue of arbitration shall be at New Delhi.
- e. All arbitration proceeding shall be conducted in English and a daily English record of such proceeding shall be maintained.
- f. Any appeal against the arbitration award will be subject to the jurisdiction of courts at New Delhi only.
- g. Successful Bidder shall continue to work under the Contract during the arbitration proceedings unless otherwise directed in writing by the PNB, unless the matter is such that the works/services cannot possibly be continued until the decision of the arbitrator or of the presiding arbitrator, as the case may be, is obtained.

30. **Excepted Matters from Arbitration**

If the dispute of difference pertains to the under noted matters (called excepted matters) the decision and in writing of the PNB shall be final, conclusive and binding on the parties.

- a. Instruction
- b. Transactions with local authorities.
- c. Proof of quality of materials.
- d. Assigning or under letting of the contract
- e. Certificate as to the causes of delay on the part of the successful bidder and justifying extension of time.
- f. Rectifying of defects pointed out during the defects liability period.
- g. Notice to the successful bidder to the effect that he is not proceeding with due diligence.
- h. Certificate that the bidder has abandoned the contract.
- i. Notice of the determination of the contract by the Employer.

31. **Safety Measures**

Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites of work shall be so stacked or placed as to cause danger or inconvenience to any person or the public.

32. **Relationship Between Parties**

The engagement of bidder shall not constitute the appointment of either Party as the legal representative or agent of the other Party. This engagement is on a principal to principal basis between the Parties hereto. No Party to this engagement shall have any right or authority to assume, create or incur any liability or any obligation of any kind, express or implied, against or in the name of or on behalf of the other Party to this Tender/Agreement except as may be specifically provided.

33. **Publicity**

In connection with the transactions contemplated by this engagement each Party agrees that it will not use other Parties name, marks, symbols, or logos in any advertising, promotional material, press release, publication, public announcement, or through other media, whether written or oral, without the prior written consent of such other Party.

34. **Non-Exclusivity**

It is expressly agreed that the engagement between the parties, shall be on a non-exclusive basis. Bank reserves its right to appoint/engage one or more contractors/agencies/service providers to provide the like services or/and work concurrently during the currency of engagement.

35. **Other Terms & Conditions**

35.1 Bank shall not entertain any claim arising on account of damages, compensation or expenses payable as a result of any accident or injury sustained by any workman/staff of the bidder or any claim under the Workman's Compensation Act etc. The bidder may obtain necessary insurance cover to meet any of the above contingencies.

35.2 The bidder and his staff shall abide by the regulations/requirements of Security Department and strictly follow the rules. Bank's security staff will have right to check, search or interrogate any of the bidder staff while entering/ remain present/ leaving the PNB premises for security purposes.

35.3 The bidder shall be responsible for any loss/damage to the materials and other assets of the PNB by his staff deployed for duty.

35.4 The bidder shall also be wholly responsible for theft, burglary, fire or any other mischievous act and conduct done by their staff.

36. **Indemnity Clause**

a. Service Provider/Vendor shall indemnify, protect and save the Bank, its directors and employees, and hold them harmless from and against all claims, losses, costs, damages, expenses, action suits and other proceedings, (including reasonable attorney fees), relating to or resulting directly or indirectly from any system failure/ anomaly / defect / shortcoming / unintended consequence in services/goods in breach of the terms of this agreement, or infringement by the Service Provider / Vendor of any patent, trademarks, copyrights etc. or breach of the terms of this agreement or such other statutory infringements in respect of all services rendered / goods provided to fulfill the scope of this Agreement.

b. Service Provider / Vendor further undertakes to promptly notify PNB in writing any breach of obligation of the Agreement by its employees or representatives including confidentiality obligation and in such an event, PNB will in addition to and without prejudice to any other available remedies be entitled to immediate equitable relief in a Court of competent jurisdiction to protect its interest including injunctive relief.

c. Service Provider / Vendor hereby undertakes the responsibility to take all possible measures, at no additional cost, to avoid or rectify any issues which thereby results in non-performance of software/ hardware/ deliverables/goods within reasonable time. Service Provider / Vendor also undertakes to co-operate

with other service providers/vendors thereby ensuring expected performance covered under scope of work.”

PUNJAB NATIONAL BANK

8. INSTRUCTIONS TO BIDDERS

1. Bidding Process (Two Stages)

For the purpose of the present job, a two-envelope bidding process will be followed. The response to the present tender will be submitted in two parts:

- Technical bid
- Commercial bid

The bidders will have to submit the technical bid in Banks e-procurement system as well as in hard copy and commercial bids in only online form through Bank's e-procurement system.

1.1 Technical Bid

Technical bid will also contain the Compliance statement as per the Terms & Conditions mentioned in the Tender Documents, and NOT contain any pricing or commercial information at all. Technical bid documents with any commercial information will be rejected.

In the first stage, only technical bids will be opened and evaluated. Only those bidders confirming compliance to all the terms & conditions of Tender document shall be short-listed for commercial stage.

1.2 Commercial Bid

In the second stage, the Commercial bid of only those bidders, whose technical bids are short listed, will be opened.

2. Submission of Bids

Bidders are required to strictly submit their bids in electronic form using the e-procurement system at <https://etender.pnbnet.in> the Bank by using their digital certificates of class II and above (both encryption and signing). All the interested bidders should register themselves in the e procurement system <https://etender.pnbnet.in> for submitting the bids online, if they have not done earlier. The Tender document and further corrigendum, if any can also be downloaded from Bank's website www.pnbindia.in; <https://etender.pnbnet.in>. Bids received after closing of the bid in the e-procurement system are summarily rejected without any reason. The commercial bid should be submitted online only.

All the technical supporting documents should be submitted manually in a sealed envelope as under:

Envelope 1: Cost of Tender Document of Rs.2,360/-(inclusive of GST) along with EMD of Rs. 21,000/- shall be submitted in a sealed envelope and shall be super scribed as “EMD for *Supply, Installation, Testing and Commissioning of Ductable & Cassette Air Conditioning System, Head Office, Punjab National Bank, Dwarka, Plot no 4, Sector -10, New Delhi 110075*”.

Envelope 2: This envelope should contain all the technical supporting documents as mentioned in Clause 3 below and Envelope 1. It shall be super scribed as “Technical bid for *Supply, Installation, Testing and Commissioning of Ductable & Cassette Air Conditioning System, Head Office, Punjab National Bank, Dwarka, Plot no 4, Sector -10, New Delhi 110075*” before the final date & time of bid submission at the following address.

Chief Manager
Punjab National Bank,
Head Office,
1st Floor, 'A' Wing, GSAD,
Plot No 4, Sector -10,
Dwarka, New Delhi 110075

At the time of physical submission of bid, bidder has to show acknowledgement e-mail received after completion of the bid submission in proof of having submitted the bid online.

3. **Content of Documents to be Submitted**

Documents required in Technical Bid Envelope (Sealed Cover):

- i. Letter submitting tender.
- ii. Tender Document & corrigendum if any, duly signed on all pages by the authorized person.
- iii. Valid dealership/ authorization Certificate from OEM.
- iv. Work order copies along with the completion certificates from the client.
- v. Copy of the latest income tax return, PAN, GST Registration Certificate.
- vi. Audited Balance Sheet and P & L Account for the three years mentioned.

- vii. Certificate from Chartered Accountant certifying the turnover of last three financial years i.e. 2015-16, 2016-17, 2017-18.
- viii. An undertaking in respect of not black-listed/ barred by any Public Sector Bank, RBI or IBA or any other Government/PSU agencies.
- ix. Affidavit duly notarized in respect of non execution of *similar work(s) through another contractor on back to back basis*.
- x. Bidder Information
- xi. Acceptance of Compliance Statement
- xii. Bid Earnest Money/Tender Document cost.
- xiii. Power of attorney / Board resolution in favour of authorized person signing the Bid documents for firms other than proprietorship.
- xiv. Contact details of service team/ centers and nodal point of contact

Note: a) All pages of the bid documents must be signed by authorized person.
 b) All pages of the bid documents should be numbered in serial order i.e. 1, 2, 3...
 c) Commercial bid to be submitted in e-procurement process only. No hardcopy of the same be enclosed with the supporting documents.

4. **Preliminary Examination**

Bank will examine the bids to determine whether they are complete, whether any computational errors have been made, whether required information has been provided as underlined in the bid document, whether the documents have been properly signed, and whether bids are generally in order.

The bid determined as not in order as per the eligibility criteria will be rejected by the Bank. The decision of the Bank is final towards evaluation of the bid documents.

5. **Evaluation and Award Criteria**

5.1 After opening of the technical bids, all the documents and annexure (except commercial documents/offer) will be evaluated by the Bank. First, received bids will be evaluated based on the eligibility criteria. Technical bids of only those bidders satisfying the eligibility criteria will be evaluated.

5.2 Only those bidders satisfying the technical requirements and accepting the terms and conditions of this document shall be short-listed for further steps. PNB will determine to the satisfaction whether the bidder selected, having submitted the best

evaluated responsive bid, is qualified to satisfactorily perform the contract. The decision of PNB will be final in this regard.

5.3 The determination will take into account bidder's financial, technical and support capabilities, based on an examination of documentary evidence submitted by bidders in support of eligibility criteria.

5.5 The L-1 bidder shall be decided on the basis of total cost of all items quoted in commercial bid.

5.6 The award of contract will be based on evaluation of technical and commercial bids.

Note: - Technical bids will be opened in the presence of bidders who qualify and choose to attend as above. The above schedule is subject to change. Notice of any changes will be published on Bank's website (www.pnbindia.in & <https://etender.pnbnet.in>). Further, please note that commercial bid opening date and time will be intimated to the technically qualified bidders at a later date.

9. SPECIAL CONDITIONS FOR CONTRACT (SCC)

1. The specification for the entire work shall be in accordance with latest CPWD specifications and latest IS codes. Whenever these codes are silent, the same shall be governed by sound engineering practice and the decision of the Bank in matter of interpretation shall be final and binding on the successful bidder.
2. The contractor shall be responsible for any damage caused to the equipment/building during the execution of the work.
3. In case of any accident during the work leading to injuries/damages to human being equipment and or loss of life, the contractor shall be fully responsible for settling all claims and indemnify the Department against any claims arising out of such accidents; consequential damages to other systems will however be not recoverable from contractor.
4. Any break-down call or complaint reported to the contractor verbally or in writing shall be attended promptly during the warranty period.
5. All the material used for the work should be OEM certified material.
6. The tendered rates quoted by the contractor shall be firm and final. Nothing extra will be paid on this account.
7. Contractor is liable to provide all necessary electrical precautionary measure to his staff and all the local safety and security regulations shall be observed strictly.
8. All electrical works shall be got carried out through licensed Electrical Contractor having experience of similar work. The work shall be executed as per specifications and strictly in keeping with relevant IS code and rules and regulations of authorities
9. The successful bidder shall be required to maintain the coordination with the Building Electrical/ HVAC Contractor, as required.
10. No old/ dismantled material shall be used by the contractor in the work under any circumstances. Unless otherwise specified or under instruction of the Bank.
11. Any act of indiscipline/ misconduct/ theft/ pilferage on the part of any employee engaged by the successful bidder resulting in any loss to Bank in kind or cash will be viewed seriously and Bank will have the right to claim damages or levy fine and/ or terminate the Contract forthwith, if necessary.
12. The successful bidder shall strictly comply with the provisions of safety code including obtaining necessary insurance cover/ policy to protect Bank's interest on account of loss to any person(s) and the property arising due to faulty installation etc. on the successful bidder's part.

13. The successful bidder shall obtain adequate insurance policy/ policies in respect of his workmen to be engaged for the work towards meeting the liability of compensation arising out of death/ injury/ disablement at work etc.

PUNJAB NATIONAL BANK

10. ARTICLES OF AGREEMENT

This agreement made on this ____ day of _____, 2019 at **New Delhi**

BETWEEN

Punjab National Bank, a Body Corporate, constituted under the Banking Companies (Acquisition and transfer of undertakings) Act 1970 (Act No.V of 1970), having its Head Office at Plot No 4, Sector -10, Dwarka, Delhi-110075 (hereinafter called the "Bank", which term shall, wherever the context so permits, mean and include its successors and assigns) of the First Part;

AND

M/s _____, having its Office _____
(hereinafter called the "Contractor", which term shall, wherever the context so permits, mean and include its successors and permitted assigns) of the Second Part. Whereas,

- a. The Bank, vide its Award Letter dated _____ has entrusted to the Contractor the "Supply, Installation, Testing and Commissioning of Ductable & Cassette Air Conditioning System, Head Office, Punjab National Bank, Dwarka, Plot no 4, Sector -10, New Delhi 110075".
- b. The Contractor has agreed to perform the work described herein below in consideration of the charges prescribed herein.

NOW THIS AGREEMENT WITNESSES AS FOLLOWS:

1. In this agreement words and expressions shall have the same meaning as are respectively assigned to them in the said conditions of contract hereinafter referred to.
2. The following documents and the terms & conditions contained therein shall form and construe as integral part and parcel of this agreement viz.
 - a. Original tender document (Part 'A' & 'B').
 - b. Award/ Acceptance letter
 - c. Performance Bank Guarantee/ Demand Draft for Security Deposit.
3. The aforesaid documents shall be taken as complementary and mutually explanatory of one another, but in the case of ambiguities of discrepancies the latest documents issued by the Bank shall prevail over the earlier documents.
4. In consideration of payment to be made by the PNB to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the PNB to perform,

execute, complete and maintain the work in conformity in all respects with the provision of the contract.

5. The PNB hereby covenants to pay the Contractor in consideration of the execution, completion and maintenance of the work such sums as shall become payable hereunder at the time(s) and in the manner prescribed in the said conditions and price schedule of quantities / bill of quantities prescribed in the contract.

6. IN WITNESS whereof the parties hereto have caused their respective common seals to be hereunto affixed (or have hereunto set their respective hands and seals) the day, month and year first above written.

7. All disputes arising out of or in connection with this agreement shall deem to have arisen in New Delhi and only the courts of New Delhi shall have the jurisdiction to determine the same.

SIGNED AND SEALED AND DELIVERED BY THE

Said

Said

(Name)

(Name)

on behalf of the Contractor

on behalf of the PNB

In the presence of

In the presence of

Name:

Name

Address:

Address:

Note: - This draft form is included in the tender documents only for the information of the bidders. Successful bidder will be required to complete the form in due course.

11. BIDDERS INFORMATION

1. Name
2. Constitution (Proprietorship/ Limited etc.)
3. Address
4. Names & Addresses of the Partners/ Directors if applicable
5. Name of Contact Person(s) with their Mobile Numbers
6. Office Telephone, Fax, e-mail
7. PAN No.
8. GST Details: GSTIN/ARN –
State Code –
HSN/SAC Codes –
9. Manpower Employed.

12. BIDDERS FINANCIAL INFORMATION

Name: _____

Constitution: _____

Address: _____

Names & Addresses of the Partners if applicable: _____

Contact Person(s) _____

Telephone, Fax, e-mail _____

Number of years of experience _____

Please give brief financial particulars of your firm for the last three accounting years along with the volume of business handled.

(The information will be kept confidential)

Year	2015-16	2016-17	2017-18
Total Turnover			

Signature of authorized person
Seal of company

13. COMPLIANCE STATEMENT

DECLARATION:

Please note that any deviations mentioned elsewhere in the bid will not be considered and evaluated by the Bank. Bank reserve the right to reject the bid, if bid not submitted in proper format as per Tender Document.

<u>Compliance</u>	<u>Description</u>	<u>Compliance (Yes/No)</u>
Terms and Conditions	We hereby undertake and agree to abide by all the terms and conditions including all annexure, corrigendum(s) etc. stipulated by the Bank in this Tender Document. (Any deviation may result in disqualification of bids).	

Signature:

Seal of company

TECHNICAL SPECIFICATIONS

1. Scope of Work:

a. The scope of this tender comprises the design, supplying, installation, testing and commissioning of 100% inverter technology based/ rotary type **Ductable AHU & Cassette** type system of air conditioning conforming to these specification and in accordance with the requirements of Schedule of Quantities. The prices quoted shall include all the equipment ancillary material as specified and all such items whatsoever and which may be required to fulfil the intent and purpose as laid down in the specification. The contractor shall calculate equipment capacity based upon design parameters specified for the system, design & verify all the quantities and sizes of refrigerant pipe, fitting, cables, control cable, pipes, insulation, indoor units, and outdoor units etc. before installation to avoid any shortfall or surplus. The tenderer shall also include all required civil work and MS framework for bonafide use of installation of outdoor and indoor units. The cost quoted by tenderer shall also include the refrigerant gas R-410A & its charging for proper & specified functioning of air conditioning system. The scope of work of the contractor also includes:

- i. Cutting of walls and floors/ ceiling.
- ii. Making holes, Sleeves.
- iii. Foundations etc.
- iv. Civil work & MS frame work for indoor and outdoor units, all cuttings should be properly finished as existing surrounding.

b. The outdoor unit should be capable to perform at outside ambient temperature of 48 deg C.

c. At PNB HO Dwarka, it is proposed to install outdoor unit at the rooftop of the building. The outdoor & indoor unit shall be connected as per piping route indicated by the Bank.

2. Design Data

The existing system of air- conditioning which is centrally undertaken using chilled water system. Details of existing equipments for the proposed area of standby arrangement are as under:

<u>Sl</u>	<u>Proposed Area</u>	<u>Existing Equipment</u>	<u>Proposed Equipment</u>	<u>Remarks</u>
i.	Board Room	Floor Mounted AHU, 9600 CFM, 50 mm Static pressure. Chilled water cooled cooling coil.	Floor Mounted AHU, 9600 CFM, 50 mm Static pressure. Refrigerant cooled cooling coil (Dx type).	The proposed equipment shall be connected to the existing duct by providing the requisite dampers. The existing & proposed machines should be operable separately without any air balancing/ integration issues.
ii.	Executive Room 1	Ceiling Suspended AHU, 1800 CFM, 50 mm Static for each room. Chilled water cooled cooling coil.	Cassette unit, 4 TR	The proposed units shall be installed inside the individual rooms by modifying the false ceiling. The existing CSU units are fitted outside these rooms. The outdoor unit shall be able to perform with the pipe length of 50 mtr between indoor & outdoor units.
iii.	Executive Room 2		Cassette unit, 4 TR	
iv.	Executive Room 3		Cassette unit, 4 TR	

The firm should comply with the parameters as specified in the terms & conditions.

3. Type

- a. Unit shall be Ductable type for Board Room and Cassette type for Executive Rooms, consisting of Dx type AHU and outdoor units as mentioned above.
- b. Compressor installed in outdoor units shall be equipped with all inverter compressor for higher reliability, improved life, better backup and duty cycling purpose. The system shall be capable of changing the rotating speed of inverter compressor by inverter controller to follow variations in cooling load. The unit shall run of **R-410a** environment friendly refrigerant.
- c. Outdoor unit shall be suitable for mix match connection of indoor units.
- d. Both indoor units and outdoor unit shall be factory assembled, tested and filled with first charge of refrigerant gas before delivering at site. The refrigerant for complete system shall be charged in quoted cost.

e. Units shall be factory finished with paint as per manufacturer's standard. However, shop coats of paint that have become marred during shipment or erection shall be cleaned off with mineral spirit, wire brushed and spot primed over the affected areas, then coated with enamel paint to match the finish over the adjoining shop painted surfaces.

4. **Capacity:** The cooling capacity of outdoor and indoor units mentioned in the "Bill of Quantities" is indicative based on estimate. The successful bidder shall confirm that the cooling capacity of these machines is sufficient to provide the desired indoor conditions based on own heat load calculations.

5. **Outdoor Unit**

a. The outdoor unit shall be a factory assembled unit housed in a sturdy weather proof casing constructed from rust-proofed heavy gauge mild steel panels coated with a baked enamel finish. The unit should be completely factory wired; tested with all necessary controls.

b. All outdoor units shall have 100% inverter rotary compressors and be able to operate even in case of breakdown of one compressor. In case of outdoor units above 18HP, the outdoor unit shall have compulsorily at least 2 separate inverter compressors so that the operation is not disrupted with failure of any inverter compressor and if one inverter compressor malfunctions, other continues to provide emergency operation smoothly till repair is effected.

c. The unit shall be provided with duty cycling arrangement for multiple inverter compressors to facilitate sequenced operation of the machine for better stability and prolonged life.

d. The outdoor unit shall be modular in design and should be allowed for side by side installation. The unit shall be provided with its own microprocessors control panel.

e. The outdoor unit should have anti-corrosion paint free steel plate for easy mounting of unit.

f. The outdoor unit should be fitted with low noise, aero spiral design fan with grill for spiral discharge airflow to reduce pressure loss and should be fitted with DC fan motor for better efficiency. Wherever required or as shown on the drawings the unit shall be selected for high external static pressure (ESP) not less than 78Pa (8mm WG) to meet long exhaust duct connection requirement.

g. The unit shall be suitable to operate on environment friendly R 410A refrigerant.

h. The outdoor units shall be provided with necessary thermo- guard weather protection to avoid any kind of leakage in refrigerant piping. The protection once applied shall be applicable for a period of 2 years.

i. The outdoor unit shall be able to perform with the pipe length of 50 mtr between indoor & outdoor units.

j. **Compressor**

The compressor shall be highly efficient, scroll type and capable of 100% inverter control. The inverter compressor shall change the speed in accordance to the variation in cooling or heating load requirement. All outdoor unit shall have multi-steps of capacity control to meet load fluctuation and indoor unit individual control. All parts compressor shall be sufficiently lubricated stock. Forced lubrication may also be employed. Oil heater shall be provided in the compressor casing. Inverter compressor shall preferably by Reluctance DC inverter compressor for higher efficiency and improved reliability.

k. **Heat Exchanger**

The heat exchanger shall be constructed with copper tubes mechanically bonded to aluminium fins to form a cross fin coil. The aluminium fins shall be covered by anti-corrosion resin film. The unit should be with e-pass heat exchanger to optimize the path of heat exchanger and for better efficiency of condenser. The unit shall be provided with necessary number of direct driven low noise level propeller type fans arranged for vertical discharge. Each fan shall have a safety guard.

l. **Refrigerant Circuit**

The refrigerant circuit shall include an accumulator, liquid and gas shut off valves and a solenoid valves at condenser end. The equipment must have in built refrigerant stabilization control for proper refrigerant distribution. All necessary safety devices shall be provided to ensure the safety operation of the system.

m. **Safety Devices**

System shall be provided with all safety devices as required and to ensure safe operation of the system, but not restricted to the following:

- a. High pressure switch.
- b. Low pressure switch.
- c. Fuse.

- d. Fan drive overload protector.
 - e. Fusible plug.
 - f. Overload relay.
 - g. Overload protection for inverter.
 - h. Fan motor safety thermostat
- n. **Oil Recovery System**
- a. Each unit shall be equipped, with an oil recovery system to ensure stable operation with long refrigerant piping.
 - b. The system must be provided with oil balancing circuit to avoid poor lubrication.
- o. **Anti-corrosion Treatment**
- a. Outdoor units should be designed with anti-corrosion specifications as detailed below for use in area, which are subject to salt damage and atmospheric pollution as specified in the BOQ.
 - b. The portion of machines like side panel, outer panel, bottom frame, which are exposed to corrosive atmosphere, should be of alloyed hot-dip zinc coated steel plate, coated with corrosion protection powder polyester resin coating on both inner and outer surfaces in thickness of 64 micron or more.
 - c. Finned coil protection net should have coating of resin coating containing ultraviolet ray absorbent. Fan and its fan protective net should be with weather resistant polypropylene resin.
 - d. The copper pipe –aluminium fins shall be special acrylic resin coated and internal supports, frame, control box shall also be hot-dip zinc coated steel plate and with rust preventive powder coating of 64 micron or more on inner and outer surfaces.
 - e. All screws and bolts used in outdoor unit shall be provided with SUS410, Zinc-nickel alloy plating, zinc chrome acid film treatment and rust inhibitor coating.

6. **Indoor Units:**

6.1 This section deals with supply, installation, testing, commissioning of various type of indoor units conforming to general specification and suitable for the duty selected. The type capacity and size of indoor units shall be as specified in detail Bill of Quantities.

6.2 Indoor unit shall be ceiling mounted cassette type, floor/ ceiling mounted ductable type or other as specified in BOQ. Each unit shall have electronic expansion valve to control refrigerant flow rate respond to load variations of the rooms. The indoor units shall have following features:

- a. The cooling coil shall be made out of seamless copper tubes and have continuous aluminium fins. The fins shall be spaced by collars forming an integral part. The tubes shall be staggered in the direction of airflow. The tubes shall be hydraulically/ mechanically expanded for minimum thermal contact resistance with fins. Each coil shall be factory tested at 21kg/sqm air pressure under water.
- b. Unit shall have cleanable type filter fixed to an integrally moulded metallic frame for AHU and plastic frame for cassette. The filter shall slide away type and neatly inserted.
- c. Each unit shall be with wired/ wireless LCD type remote controller. The remote controller shall memorize the latest malfunction code for easy maintenance. The controller shall have self diagnostic features for easy and quick maintenance and service. The controller shall be able to change fan speed and angle of swing flap individually as per requirement.
- d. The indoor units shall generally be of following type:

Ceiling Mounted Cassette Type Unit (Multi Flow/ Round Flow Type)

- i. The unit shall be ceiling mounted type. The unit shall include pre-filter, fan section and DX-coil section. The housing of the unit shall be powder coated galvanized steel. The body shall be light in weight and shall be able to suspend from four corners. The fan shall be aerodynamically designed diffuser turbo fan type.
- ii. Unit shall have an external attractive panel for supply and return air. Unit shall have four way supply air grilles on sides and return air grille in centre.
- iii. Each unit shall have high lift drain pump, Low gas detection system and very low operating sound.
- iv. All the indoor units regardless of their difference in capacity should have same decorative panel size for harmonious aesthetic point of view.

Ceiling/ Floor Mounted AHU Unit

- i. The unit shall be provided with necessary filtration grades as mentioned in BOQ.
- ii. The unit shall have AHU control kit at quoted cost for effective control of AHU unit and should be integrated with outdoor unit.
- iii. Necessary temperature control sensors should be provided to measure the return air temperature and room temperature shall be able to maintain from 18 to 25 deg C.
- iv. The proposed unit should be integrated with the existing AHU unit ducting system by providing necessary dampers. The arrangement shall be made in such a manner that the existing ducting be operable without problem while using the both units as required.

7. Piping

7.1 General:

- a. The scope under this section covers supply, laying, erection, testing and commissioning of pipes, pipe fittings and associated valves conforming to these specifications and the general arrangements shown on the drawings.
- b. All piping including pipe fittings and valves shall follow the relevant Indian Standards/manufacturer's recommendations.

7.2 Refrigerant Piping :

- a. All refrigerant piping for air conditioning system shall be constructed out of hard drawn copper refrigerant pipes with copper fittings and silver-soldered joints. The refrigerant piping arrangements shall be in accordance with good engineering practice within the air-conditioning industry and shall be inclusive of charging connections, suction line insulation and all other items normally forming part of proper refrigerant circuits.
- b. All joints in copper piping shall be sweet joints using low temperature brazing and or silver solder. Before joining 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.
- c. The REFNET Joints (Y-joints) and REFNET Headers shall be made from copper and shall be factory fabricated and pre-insulated.

d. After the refrigerant piping installation has been completed, the refrigerant piping system shall be pressure tested using nitrogen at pressure of 35Kg/ cm² and 10 Kg/cm² (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.

e. The air-conditioning system supplier shall verify the refrigerant piping design conceived and brought to the notice of Consultants if any discrepancy is found.

f. The OD & wall thickness of copper refrigerant piping shall be as follows:

Outside Pipe Dia (mm)	Wall thickness (mm)
54.1	1.5
41.3	1.3
34.9	1.3
28.6	1.2
25.4	1.2
22.2	1.2
19.1	1.0
15.9	1.0
12.7	0.8
9.5	0.8
6.4	0.8

g. 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 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.

h. The whole of the liquid and suction refrigerant lines including all fittings, valves and strainer bodies, etc. shall be insulated with 19mm thick closed cell elastomeric insulation material. The joints shall be properly sealed with synthetic glue to ensure proper bonding of the ends.

7.3 **Drain Piping:**

i. The drain pipe connection of each unit to the main header should be 25 mm dia/ 32 mm dia as required. The header pipe should be of 32/40/50 mm dia as required. The drain-pipe should be heavy CPVC pipe ISI marked and conforming

to relevant IS complete with fitting as required whereas the connection of the fan coil unit to the PPR pipe should be with flexible braided pipe. The drain piping should be insulated with 9 mm thick tubular nitrile rubber insulation.

ii. For proper drainage of condensate U trap & Non-Return Valves to prevent reverse flow shall be provided in the drain piping wherever required. All pipe supports shall be prefabricated and pre-painted slotted angle supports, properly installed with clamps. The condensate drain pipe arrangement for disposal of condensate water be made in such a way that there should not be any leakages of condensate water inside rooms as well in the route of drain water pipe line & water should be discharged at the location jointly decided with Engineer-in-Charge of work. All associated Civil Engineering works as per requirement at site in above connection like making chase in the wall & restoring it original shape by re-plastering & repainting, etc. are included in the scope of work. The arrangement of drain- pipe shall be made in such a way that it should not affect the aesthetic of the building as well as is maintenance friendly & easily accessible.

8. **Dampers**

a. Box type volume control dampers having lever operation shall be used at the outlet of existing air conditioning ducting to prevent air leakage through the same during the Dx AHU operation.

b. All dampers shall be multi blade type of robust construction of galvanized steel unless and until specified otherwise in the Bill of Quantities and tightly fitted. The design, method of handling and control shall be suitable for the location and service required.

c. Motorized and manual volume control dampers shall be complete with frames and bronze bearings as per site conditions. After completion of the duct work, dampers are to be adjusted and set to deliver air flow as specified on the drawings.

d. **Actuators:** The actuator shall be maintenance free coupled spring return type suitable to work on 230V electric supply. The torque rating of the actuator shall exceed at least by 15% over torque required to open/ close the damper. The selection of actuator size shall be the responsibility of the contractor. Spring return time shall be 20 seconds or less at ambient temperature. Actuators shall be operated automatically during starting & stopping AHU for opening & closing of motorized dampers.

9. **Other Terms & Conditions**

- a. All equipment described hereafter shall be in accordance with the specifications.
- b. All equipment shall be selected and installed for the lowest operating noise level.
- c. Supply of various equipment shall include all expenses for correspondence with manufacturers, submission of shop drawings, documents and their approval by the Architects, procurement of equipment, transportation, shipping, payment of all taxes and levies, storage, supply of equipment at the point of installation, furnishing all technical literature required, replacement of defective components and warranty obligations for the individual equipment.
- d. Installation of various equipment shall include all material and labour associated with hoisting and lowering of equipment in position, insulation of the components and vibration isolation as required, grouting & anchoring or suspension arrangements and all incidentals associated with the installation as per the specifications and manufacturer's recommendation.
- e. Vibration isolators as specified or as recommended by the manufacturer shall be installed with each component. Performance ratings, power consumption and sound power data for each component shall be verified at the time of testing and commissioning of the installation, against the data submitted with the tenders.
- f. Shop coats of paint that have become marred during shipment or erection shall be cleaned off with mineral spirit, wire brushed and spot primed over the affected areas, then coated with enamel paint to match the finish over the adjoining shop painted surfaces.
- g. Testing and commissioning shall include furnishing all labour, materials, equipment, instruments and incidentals necessary for complete testing of each component as per the specifications & manufacturer's recommendations, submission of test results to the Bank, obtaining their approval and submission of necessary completion documents & drawings, providing minor dressing of walls and floor, providing and installing pipe sleeves as required and treatment to pipes as per the specifications.

h. All piping should be installed conforming to the relevant Indian Standards, approved shop drawings and the specifications. All water/refrigerant re-circulation piping should be tested as per the specifications.

i. Piping installation should include all costs towards supplying and fixing of pipes and fittings (elbows, tees, reducers) cutting, threading, joining, welding, soldering and affecting connections are required, providing non- hardening sealing material as well as rubber gaskets for screwed flanges, providing and installing adequate number of clamps, hangers, saddles, brackets, rawl plugs and other accessories for pipe supports, providing minor dressing of walls and floor, providing and installing pipe sleeves as required and treatment to pipes as per the specifications.

j. After completion of the installation, the entire piping system shall be tested for leak in accordance with the specifications.

k. All equipment and material to be supplied under this contract shall be conforming to the relevant latest Indian Standards and international standards as applicable.

10. **Installation:** The installation shall be carried out strictly by the refrigeration equipment manufacturers or by the contractor under the supervision of the trained engineer of the refrigeration equipment, including the required distribution joints and headers. Contractor shall provide a certificate of the OEM of the ductable system after the completion of installation work for satisfactory installation, then only, commissioning of the complete unit shall be undertaken.

11. **Wiring:** Various sizes PVC insulated copper conductor wiring cables, PVC insulated multi stranded sheathed copper conductor wiring cable for working voltage upto & including 1100 Volts, shall be ISI marked conforming to IS 694/1990 (Latest Version). Wiring of installation shall be in conformity with IS 732/1989 (Latest Version).

11.1 **Rigid PVC Conduit Pipe:** Laying conduit shall be in conformity with IS: 732/1989 (Latest Version). Fitting for rigid non-metallic conduit shall conform to IS 3419/1989 (Latest Version) and accessories shall conform to relevant IS.

12. **Mode of Measurement**

The mode of measurement for the various items, unless otherwise specified, shall be as follows:

12.1 **Piping**

Payment for refrigerant piping and condensate drain piping shall be made on the basis of linear measurement including all material and labor for installed pipes. The quoted price is linear rate per meter for each nominal diameter which shall include all pipe fittings, pipe supports & hangers, vibration isolation arrangement, closed cell elastomeric insulation material and any other item required to complete the pipe installation except refnet joints, valves of any kind and strainers.

12.2 **Ducting.** Payment for ducting shall be made on the basis of the external surface area of the ducting including all material and labour for installed duct. The rates per Sq Mtr of the external surface shall include MS angle iron/ GSS flanges, gaskets for joints, nuts & bolts, duct supports & hangers, vibration isolation pads or for joints, suspenders, dash fasteners, inspection doors, dampers, turning vanes etc. which will be required to complete the duct installation including external thermal insulation and internal acoustic lining for plenum. The external area shall be calculated by measuring the overall width and depth (including the corner joints) in the centre of the duct sections and overall length of each duct section from flange face in case of duct lengths with uniform cross section. Total area will be arrived at by adding up the areas of all duct sections.

12.3 All quantities reflected in the schedule are for contractor's guidance only.

13. **Civil Works:** The necessary civil works are to be undertaken as mentioned in the BOQ in respect of making foundation for AHU and dismantling & making good of false ceiling work immediately after laying of pipeline.

GUARANTEE PROFORMA FOR HVAC INSTALLATION

Owner: Punjab National Bank

Location: Head Office, Plot No 4, Dwarka Sector 10, New Delhi 110075.

1. We warrant that everything supplied by us including all components fitted into the equipment manufactured by others also, shall be in all respects free from all defects and faults in material, workmanship and manufacture and shall be of the highest grade and quality to acceptable standards for all materials of the type ordered and shall be in full conformity with all the specifications, drawings or samples if any and we shall be fully responsible for its efficient performance. This guarantee shall survive inspection for acceptance and payment for the equipment and installation, but shall expire (except in respect of the complaints notified to us) 12 months from the date of issue of completion certificate by the Bank. The complaints, workmanship, manufacturer or performance of any of the equipment or part/parts thereof shall be notified by fax within 12 months from the date of issue of such completion certificate.
2. We shall replace such of these parts which require replacement under these conditions free of cost, charge and expenses to the purchaser. In addition, we shall be responsible for a period of 12 months from the date of issue of completion certificate for any defect that may develop or appear under the conditions provided by the Contractor or use thereof arising from faulty material design or workmanship in the equivalent or any part thereof or faulty installation of the equipment by the Contractor but not otherwise and shall correct such defects within one week from the date of notification at his own cost when called upon to do so by the purchaser who shall state in writing in what respect the portion is faulty.
3. Any faulty component replaced or renewed under the clause shall also be guaranteed for a period of six months from the date of such replacement or removal of until the end of the above mentioned period whichever is later.
4. If defects are not rectified within a reasonable time as mentioned in the written notice, the Bank shall proceed to do so at the Contractor's risk and cost without prejudice to any other right thereof.

SIGNATURE AND STAMP OF THE CONTRACTOR

DATE :

PREFERRED MAKES OF EQUIPMENT & MATERIALS

<u>Sl</u>	<u>Equipment</u>	<u>Make</u>
i.	Outdoor unit for Ductable AHU	LG/ Mitsubishi/ O'General/ Daikin
ii.	Floor mounted Dx type AHU	Edgetech/ Zyco/ Caryaire
iii.	Cassette AC	LG/ Mitsubishi/ O'General/ Daikin
iv.	Refrigerant Pipes	Rajko/ Maxflow/ Mandev
v.	Ref Pipe Insulation	Superlon/ aflex/ Supreme
vi.	Electrical Cables	Finolex/ Polycab/ Havells
vii.	PVC Drain Pipes	Jindal/ Supreme/ Polypack
viii.	Cable Tray	Rico Steel/ MEM/ Iniana
ix.	ELCB & DB	L&T/ Schneider/ Havells/ Siemens
x.	Weather Proof Box	L&T/ Schneider/ Havells/ Siemens/Legrand
xi.	Fasteners	Hilti ,Fischer,Bosh
xii.	Closed/ Open Cell Elastomeric Insulation	Superlon/ Aflex/ Supreme
xiii.	GS Sheet for ducting	SAIL/ Tata Steel/ Jindal/ Lloyd
xiv.	Filters	Spectrum/ Camfil/ Mechmaark
xv.	Motor for AHU	ABB/ Siemens/ BBL
xvi.	Plug Fans	ZIEHL/ ABEGG/ Krugar/ Nicotra
xvii.	Smoke cum Fire Dampers	Caryaire/ Systemaire
xviii.	Actuators for Fire Dampers	Belimo(Swiss), Joventa (Swiss), Siemens

Note:

- a. Successful bidder to obtain the approval for Make & Material meeting tender specification prior to start of work.
- b. Make of any other equipment/ material not mentioned above shall be got approved from the Bank before execution.
- c. Relevant catalogue to be submitted along with the offers.
- d. Relevant Test Certificates to be produced for various equipment & material during billing process.
- e. Under electrical, wherever, there are multiple choices of brands /approved makes, the brands/make nominated by Bank out of the multiple brands shall have to be supplied.

TECHNICAL DATA TO BE GIVEN BY THE VENDORS
(To be submitted along with the offers)

<u>Sl</u>	<u>Item</u>	<u>Particulars</u>	
1.	Outdoor Unit	Ductable AC	Cassette AC
1.1	Manufacturer		
1.2	Country of Origin		
1.3	Type of Unit		
1.4	Model and No. of Units		
1.5	Overall Dimensions (mm)		
1.6	Noise Level (dB) at 1M distance		
1.7	Operating Weight (Kg)		
1.8	Material of casing		
1.9	Type of finish		
1.10	Cooling Capacity (HP)		
	Nominal		
	Actual		
1.11	Power Consumption at 35 deg C		
1.12	Power Consumption at 42.2 deg C		
1.13	Running Current drawn (Amp)		
1.14	Starting Current (Amp)		
1.15	Recommended Incoming switch rating (Amp)		
1.16	Recommended Aluminium cable size		
1.17	Vibration isolation arrangement		
1.18	COP of overall unit		
1.19	Maximum allowable actual piping length (M)		
1.20	Maximum Level Difference (M)		
2	Compressor		
2.1	Manufacturer		
2.2	Country of origin		
2.3	Type		
2.4	No of Compressors		
2.5	Model No		
2.6	Nominal Capacity		
2.7	Suction Temperature		
2.8	Discharge Temperature		
2.9	Actual capacity		
2.10	Type of Refrigerant		

2.11	Type of capacity control		
2.12	No of steps of capacity control		
2.13	Power consumption (KW)		
3	Air Cooled Condenser		
3.1	Manufacturer		
3.2	Type of condenser		
3.3	Tube material		
3.4	Fin material		
3.5	Coil face velocity (FPM)		
3.6	Type of fans		
3.7	Number of fans		
3.8	Motor rating of each fan		
3.9	Static Pressure of each fan (mmWG)		
4	Indoor Units		
4.1	Manufacturer		
4.2	Country of Origin		
4.3	Type of Unit		
4.4	Model No. of Unit		
4.5	Overall Dimensions (mm)		
4.6	Noise Level (dB) Hi/Low		
4.7	Airflow Min/Max (Cfm)		
4.8	Cooling Capacity (TR)		
4.9	Operating Weight (Kg)		
4.10	Is remote controller provided with each unit		
4.11	Type of remote controller provided		
4.12	Power Characteristics (3Ph/1Ph)		
5	Refrigerant Piping		
5.1	Material of piping		
5.2	Material of Fittings		
6	Hard/ Soft Drawn Piping		
6.1	Make		
6.2	Material		
6.3	Material of fittings		
6.4	Thickness		
7	Make & Material for Drain pipes		

PART - B

17. COMMERCIAL BID

Supply, Installation, Testing and Commissioning of Ductable & Cassette Air Conditioning System, Head Office, Punjab National Bank, Dwarka, Plot no 4, Sector -10, New Delhi 110075.

Rates quoted should include end to end scope of work of the said work i.e. Low + High side works including GST. No additional cost is payable for the scope of work mentioned other than quoted cost. **Commercial bid has to be submitted in online mode only.**

SI	BOQ Description	QTY	UNIT	RATE	TOTAL
1	<u>ODU for Ductable IDU/AHU:</u> Supply, Installation, Testing and Commissioning of Air Cooled type ductable air-conditioning system outdoor unit for operation with Dx type AHU, having automatic AHU control kit, hermetically sealed rotary type compressors, all 100% inverter, condenser coil fabricated from Seamless Copper tube & Plate type Al. fins of Multi Row, Axial Flow, low noise & upward throw condenser fan, Condenser fan - motor unit, insulated refrigeration piping, power / control wiring, earthing, all system controls-safety including providing initial gas charging etc. as required. Suitable for operation on 415 V, 50 Hz AC supply. Refrigerant 410A. The system should have flexibility for cooling with controller and fittings, powder coating of all metallic encloser etc. as per quantity given below. SITC includes full charging of R-410A refrigerant gas for whole system as per site condition, transportation & shifting charges and no extra shall be payable for refrigerant gas & transportation/ shifting work. The static pressure of the outdoor unit shall be more than 75 Pa to avoid hot air circulation. The system should give non-stop cooling at 48 degrees outside ambient temperature. Capacity : 22 TR	1	Nos.		

2	<p><u>Ductable IDU/ AHU:</u> Supply, Installation, Testing and commissioning of factory built floor mounted Dx type double skin type horizontal/vertical air handling units made of 25mm thick panels consisting of pre plasticized G.I. casing of thickness 0.6mm outside layer and 0.6 mm inside layer with polyurethane foam (PUF) insulation factory injected between them by injection moulding machine, complete with blower section with blower suitable for static pressure as required, minimum 2 bend GSS/PVC eliminators, cooling coil section with aluminium finned copper tubes (tubes thickness not less than 0.5mm) cooling coil of 6 row deep, filter section with 50mm thick metal viscous/ washable synthetic type air pre-filters, belt drive package with TEFC drive motor of efficiency class IE3 suitable for 415 ± 10% volts, 50Hz, 3 Phase AC supply suitably designed for variable frequency drive applications, drain connections, stainless steel (18G) drain pan with PUF insulation, 150 mm dia. dial type pressure gauges (2 nos.) and industrial type thermometers (2 nos.) at the inlet and outlet of coil, auto purge valve wherever required, necessary vibration isolation arrangement etc. Refrigerant R410A. The bidder shall submit fan performance curves for all fans as well as cooling coil selection sheet. The cooling coils rows shall be as per the selection based on the capacity mentioned below. The AHU panels shall be insulated with 46+/-2mm thick & 38 Kg/m³ density PU foam. The motor & blower assembly shall be mounted on Aluminium extruded section only. The item should be all complete in line with relevant standards, technical specifications of the standards and direction of engineer in-charge. AHU unit shall be integrated with outdoor AC unit for effective operation for maintaining requisite indoor conditions with controls, sensors & wired/ wireless remote. Noise level should not exceed 75 dBA when measured from 2m distance.</p> <p><u>Capacity:</u> 9600 cfm, 24 TR capacity with Static pressure shall be 50 mm WG.</p>	1	Nos		
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3	<p>Cassette AC: Supply, Installation, Testing and Commissioning of 4.0 TR capacity, Cassette type Air-conditioners, Indoor & Outdoor units complete, fitted with hermetically sealed rotary compressors, 100% inverter, R410A refrigerant suitable for Ceiling mounting, Operating on 415V, 50Hz, Three Phase/ Single phase AC supply capable of performing (a) Cooling (b) Dehumidifying (c) Air-circulating (d) Filtering (e) Cord Less Remote with LED display. Complete as per Technical Specification including indoor & outdoor units. Indoor unit equipped with LED display, adjust the air flow direction, round/ equivalent multi flow type slim units having pre-filter/ synthetic media washable filter, fan section, noise less than 48 dBA when measured from 1.5 mtr distance, multispeed motor, coil section with DX coil, electronic expansion valve, outer cabinet, drain pan & automatic drain pump, insulation, pipe connections. The outdoor unit shall be able to perform with the pipe length of 50 mtr between indoor & outdoor units.</p>	3	Nos.		
4	<p>Refrigerant Piping for Ductable Unit: SITC of Seamless heavy gauge hard drawn Copper piping of suitable size as recommended by OEM of AC including accessories, jointing/ brazing etc. duly insulated with 19mm thk Nitrile Rubber tubular Insulation. Refrigeration piping will have to be taken in the piping rack / support individually connecting to outdoor unit at terrace& indoor unit at 5th floor below terrace. Even necessary supports, fittings, valves &joints wherever required are to be included. The exposed refrigerant insulated piping shall be covered with UV Resistance canvass coating. (The correct size of pipe has to be worked out by the vendor and the number of circuits shall match the equipment manufacturer recommendation. Quantity quoted here are only for estimation purpose on tentative basis. However they are to be charged as per actual measurement at site on RMT basis as applicable). Supporting material: GI Threaded Rod, Slotted Channel and Fastener to be provided at every 1.5 meter distance to support copper piping inside Gypsum ceiling only and cost shall be included in copper piping, Exposed copper piping shall be laid in</p>	40	RMT		

	<p>cable tray with cover which is separate item not covered in copper piping. The price is inclusive of both Gas & Liquid pipes and necessary chiseling works, making good them. Make: Mettube/ Totaline/ Rajco Metals/ Jindal Refrigeration.</p>				
5	<p>Refrigerant Piping for Cassette Units: SITC of Seamless heavy gauge hard drawn Copper piping of suitable size as recommended by OEM of AC including accessories, jointing/ brazing etc. duly insulated with 19mm thk Nitrile Rubber tubular Insulation. Refrigeration piping will have to be taken in the piping rack / support from terrace to individually connecting to all indoor units at 5th floor below terrace in respective rooms. Even necessary supports, fittings, valves & joints wherever required are to be included. The exposed refrigerant insulated piping shall be covered with UV Resistance canvass coating. (The correct size of pipe has to be worked out by the vendor and the number of circuits shall match the equipment manufacturer recommendation. Quantity quoted here are only for estimation purpose on tentative basis. However they are to be charged as per actual measurement at site on RMT basis as applicable). Supporting material: GI Threaded Rod, Slotted Channel and Fastener to be provided at every 1.5 meter distance to support copper piping inside Gypsum ceiling only and cost shall be included in copper piping, Exposed copper piping shall be laid in cable tray with cover which is separate item not covered in copper piping. The price is inclusive of both Gas & Liquid pipes and necessary chiseling works, making good them. Make: Mettube/ Totaline/ Rajco Metals/Jindal Refrigeration.</p>	110	RMT		
6	<p>Drain Piping: SITC of the following pipes cut to required lengths and necessary fitting with 6 mm thk. closed cell Nitrile Rubber Insulation having weather protective coating as per drawing. The drain pipes are to be connected to the existing water drain pipes by leak proof method (quantity quoted here are only for estimation purpose on tentative basis. However they are to be charged as per actual measurement at site on RMT basis as applicable). The price is inclusive of necessary</p>	60	RMT		

	chiseling works, making good them. Size:32 mm dia rigid PVC pipe (Heavy duty)				
7	SITC of MS structure Outdoor unit stand for ODU support complete with anti rust paint for ODU Units - 22 TR	1	Nos		
8	SITC of MS structure Outdoor unit stand for ODU support complete with anti rust paint for Cassette ODU Units - 4TR	3	Nos		
9	Supply and laying of FRLS PVC insulated flexible copper conductor cable of 650 Volts grade for Control / Communication i/c providing and laying of 20/25 mm ISI marked medium class pvc conduit on surface / recess, cutting the wall and making good the same so as to match with the original finish, where ever required etc. as required (Between Indoor & Outdoor Units and for remote control units) Size:2C X 1.5 sq. mm	120	RMT		
10	Supply and laying of FRLS PVC insulated flexible copper conductor cable of 650 Volts grade for input power for IDU and laying of 20/25 mm ISI marked medium class pvc conduit on surface / recess, cutting the wall and making good the same so as to match with the original finish, where ever required etc. as required. Size:3C X 2.5 sq. mm	60	RMT		
11	<u>Starter Panel for AHU:</u> Supply, installation, testing & commissioning of 5.5KW S/D STARTER, fabricated from 2mm thick CRCA sheet, Power coated, provision for incoming/outgoing cables consisting of motor duty MPCB /MCCB directly, CT operated digital ammeter with built in selector switch, phase indicating lamps, on/off trip lamps, start/stop push button, A/M selector switch, contactor's contact for building automation system. (Starter shall have MCB/MPCB/MCCB in the incomer as per type-2 coordination.) (Note - Potential free contacts to be provided for auto operation of fans during emergency/in case of fire and opening/ closing of fire dampers)	1	Nos		
12	<u>Cable Trays:</u> Supply, fabricating and installing of painted 1.6 thick MS powder coated perforated type Cable tray (with cover for exposed area) respectively including horizontal and vertical bends, reducers, tees, cross members and other accessories as required and duly suspended from the ceiling with MS	50	RMT		

	suspenders and including painting etc. (Cost of support of Cable Tray shall include in the item). Colour of paint to be approved by the client/consultant. Size:150 mm width x 50mm depth x 1.6 mm thick				
13	Cable Trays: Supply, fabricating and installing of painted 1.6 thick MS powder coated perforated type Cable tray (with cover for exposed area) respectively including horizontal and vertical bends, reducers, tees, cross members and other accessories as required and duly suspended from the ceiling with MS suspenders and including painting etc. (Cost of support of Cable Tray shall include in the item). Colour of paint to be approved by the client/consultant. Size:300 mm width x 50mm depth x 1.6 mm thick	25	RMT		
14	Distribution Box: Supplying and fixing of following ways surface/ recess mounting, vertical type, 415 V, TPN MCCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200 A tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCBs (but without MCBs and incomer MCCB) as required. 8 way (4 + 24), Double door	1	Nos		
15	MCB for DB: Supplying and fixing of Triple pole, 32 A rating, 240/415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of triple poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.	4	Nos		
16	MCCB for DB: Supplying and fixing of Triple pole, 100 A rating, 240/415 V, 10 kA, "C" curve, molded case circuit breaker suitable for inductive load of triple poles in the existing VTPN DB complete with connections, testing and commissioning etc. as required.	1	Nos		
17	ELCB FOR ODU: Supply, installation, testing and commissioning of 100A TPN ELCB in weather Proof box with all material and as per site requirement.	1	Set		
18	ELCB FOR ODU: Supply, installation, testing and commissioning of 32A TPN ELCB in weather Proof box with all material and as per site requirement.	3	Set		

19	<p>CABLING: Supply, laying, termination (with copper lugs as required), testing and commissioning of PVC sheathed FRLS XLPE insulated Copper conductor armoured cables of 1100V grade on surface of wall or in existing cable trays/masonry ducts/ Hume pipe with fixing hardware etc. as required.</p> <p>Size:4C x 16 Sq mm cable</p>	100	RMT		
20	<p>CABLING: Supply, laying, termination (with copper lugs as required), testing and commissioning of PVC sheathed FRLS XLPE insulated Copper conductor armoured cables of 1100V grade on surface of wall or in existing cable trays/masonry ducts/ Hume pipe with fixing hardware etc. as required.</p> <p>Size:4C x 10 Sq mm cable</p>	70	RMT		
21	<p>Fire Damper: Supplying, Fixing, testing and commissioning of fire dampers in supply air duct/main branch and return air path as and where required of required sizes i/c control wiring, the damper shall be motorized and spring return so as to close the damper in the event of power failure automatically and open the same in case of power being restored. The spring return action shall be inbuilt mechanism and not externally mounted. The damper shall also be closed in the event of fire signal complete as required and as per specifications.</p>	1	SQMT		
22	<p>Actuator for Motorized Fire Damper: Supply, installation, testing and commissioning of Actuators of suitable torque to operate the damper to be fitted in AHU outlet/ plenum inlet including wiring/ sockets etc.</p>	1	Nos		
23	<p>Volume Control Damper: Supply, installation, testing and commissioning of Motorized/ Manual (ON-OFF Type) duct mounted GI volume control damper with neoprene rubber gaskets, screws, linkages, bolts flanges etc. as per specification including operating . To be installed in the existing ducting and AHU outlet/ plenum inlet.</p>	2	SQMT		
24	<p>Ducting: Supply, installation, balancing and commissioning of fabricated at site with 0.63 mm GSS sheet metal rectangular/round ducting complete with insulation, neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of complete as required.</p>	20	SQMT		

25	Ducting: Supply, Installation, Testing and Commissioning of Supply air Plenum with 0.80 mm Gauge galvanized sheet with internally acoustic insulation of 32Kg.m3 Density and supports/ fasteners etc. as required.	5	SQMT		
26	Ducting: Supply, Installation, Testing and Commissioning of canvass connection with flanged ends including nuts, bolts and rubber gasket etc. for ducting as required.	1	SQMT		
27	Miscellaneous Civil works: Making of cement concrete foundation for the AHU equipment of appropriate size using cement concrete 1:2:4 complete in all respect with proper line & level as per requirements of the Bank.	1	CUM		
28	Miscellaneous Civil works: Cutting of Gypsum False ceiling at different places as per requirement and repairing the same all complete including painting and framing if any, as per instruction of Engineer In-charge.	10	SQMT		
Total Cost including GST					