

**POLLUTION CONTROL BOARD: ASSAM**  
**BAMUNIMAIDAM, GUWAHATI-781 021**  
Website : [www.pcbassam.org](http://www.pcbassam.org)

No. WB/LAB-332/19-20/65

Dated Guwahati, the 20<sup>th</sup> Jan, 2020.

**SHORT QUOTATION NOTICE**

Pollution Control Board Assam invites sealed quotations from the reputed manufacturers/ Authorized dealers/ suppliers for supply of one Atomic Absorption Spectrophotometer at its Central Laboratory. The document containing list of instruments along with detailed specifications of the items and terms & conditions may be obtained from the Board's Head Office during office hours from 27-01-2020 till 03-02-2020 on payment of Rs. 1000/- (Rupees One Thousand) only (Non-refundable) in the form of Bank Draft to be drawn in favour of "**Member-Secretary, Pollution Control Board, Assam**" payable at Guwahati. The documents can also be downloaded from our website [www.pcbassam.org](http://www.pcbassam.org) and cost of quotation document (DD of Rs.1000/-) should be accompanied with the quotation.

The quotation will be received upto 14:00 hours of **04-02-2020** and will be opened on **16.00 hours** on **04-02-2020** in presence of the quotations or their representative.

Member-Secretary

Dated Guwahati, the 20<sup>th</sup> Jan, 2020.

Memo No. WB/LAB-332/19-20/65-A

Copy to:

1. M/s. APS Advertising Pvt. Ltd. for information & necessary action. They are requested to publish the quotation notice immediately in one issue of the "The Assam Tribune" and submit the bill in duplicate to the undersigned for payment.
2. The In-Charge, Central Laboratory, PCBA for information and necessary action.
3. The Head of IT Div., Head Office, PCBA to upload the quotation notice along with the tender document in the Board's website.
4. The Account Branch of the Board for information & necessary action.
5. The Notice Board of the Pollution Control Board, Assam.
6. The Concerned File.

Member-Secretary

*Swajit (AP)  
M. de No needful  
21/1/2020*

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# **Tender Document**

**This document contains the following:**

- i) Copy of quotation notice**
- ii) General Terms and Conditions of Bid**
- iii) Terms and Conditions for Submission of Bid**
- iv) Application Form**
- v) Undertaking**
- vi) Bid Form**
- vii) Detailed specification of the instruments.**
- viii) Schedule of Earnest Money to be deposited along with Tender (Annexure-IV)**
- ix) Check List.**

## **GENERAL TERMS AND CONDITIONS:**

1. Bidder must pay for the tender document, without which tender will not be accepted.
2. The Board takes no responsibility for delay or non receipt of Tender Document sent by post either way and also reserves the right to accept; or reject any or all the tenders in part or full without assigning any reason thereof.
3. Bidder is expected to follow all the instructions mentioned in the bidding documents. Failure to furnish required information or submission of a bid not substantially irresponsive to the bidding document will be the bidder's risk.
4. This tender notice, Tender forms, Specification etc are also available on PCBA's website [www.pcbassam.org](http://www.pcbassam.org). Bidders using down loaded tender forms must submit a separate tender fee by Demand Draft alongwith the technical part of the bid. The tender without requisite tender fee will be rejected.
5. This call of tenders does not bind the Board to place order. The tenders submitted in response to this invitation be rejected without assigning any reason.
6. The Board at its discretion may extend the last date of submission of tender and opening of tenders. The final authority for acceptance of a Tender will rest with the Chairman, Pollution Control Board, Assam who does not bind himself to accept the lowest tender and is vested with the authority to reject any or all of the tenders received without assigning any reason.
7. The warranty period is between twelve months to thirty six months depending on the item and starting from the date of successful commissioning of the instrument.
8. Any overwriting, erasures and interlineations should be initiated by the bidder, without which such bid will not accept.
9. In case, the date of opening of tender is declared as Public Holiday, the tender shall be open on the next working day as the same time.
10. The bidder should be a manufacturer/authorized dealer or supplier and must submit Authorization certificate with tender documents in case of dealer or supplier.
11. Outside bidder should send the tender through Registered post. Board is not responsible for not receiving any tender within the last date of submission of tender. However, local bidder can drop their tender in the tender box kept in the office for the purpose.
12. Documents, literature, diagrams/Leaflets, samples etc. enclosed in the tender shall become the property of the Pollution Control Board, Assam without any payment.
13. Canvassing in any form will disqualify the Bid.
14. The Tender Notice **No. WB/LAB-332/19-20/65, dated 20.01.2020** should be invariably be quoted in the bid and for further correspondence in this regard.
15. The courts at Guwahati shall have exclusive jurisdiction to entertain and try all matters arising out of this contract.
16. All the Tenders should be addressed to:

**THE MEMBER SECRETARY,  
POLLUTION CONTROL BOARD, ASSAM  
BAMUNIMAIDAN, GUWAHATI-781021**

## **2.0 SUBMISSION OF BID**

1. The bid must accompany Annexure-I with Techno Commercial part of Bid and Annexure-II & III along with 'Price' part of the Bid duly filled in and signed by the Bidder along with the seal of the Firm.
2. The Bidders are requested to quote-total price of each instrument separately indicating the Govt. levies, freight, insurance, installation charges and other expenditure item-wise F.O.R. PCBA, Guwahati. The bidders are expected to examine the bidding documents carefully and are deemed to have received and read all documents. It shall be the responsibility of the bidders to request the copies of any missing documents. Failure to do so will be at bidders risks.

BIDDER CAN QUOTE THE RATES FOR ALL THE INSTRUMENTS OR SOME OF THE INSTRUMENTS AGAINST ONE TENDER DOCUMENT. HOWEVER, SEPARATE PRICE BID AND TECHNICAL BID SHOULD BE SUBMITTED FOR EACH ITEM CLEARLY MENTIONING THE ITEM CODE NUMBER, ITEM NAME ON THE TOP OF THE ENVELOPES WITH SENDERS NAME AND ADDRESS. THE POLLUTION CONTROL BOARD, ASSAM, RESERVES THE RIGHT TO ACCEPT THE TENDER IN FULL OR IN PART. THE BID FOR EACH ITEM SHOULD BE IN SEPARATE SHEETS/PAGES AND ITEM CODE NUMBER SHOULD BE WRITTEN ON THE TOP OF EACH BID. EMD SHOULD BE SUBMITTED SEPARATELY AGAINST EACH ITEM. ITEM-WISE TECHNICAL SPECIFICATIONS AND PRICES SHOULD BE IN SEPARATE ENVELOPS i.e.

THERE SHOULD BE SEPARATE ENVELOPE FOR EACH ITEMS INCASE BIDDERS DESIRES TO QUOTE MORE THAN ONE ITEM. TENDERERS SHOULD COMPLY THE ABOVE INSTRUCTION.

3. For the authorized Indian Suppliers, supplying foreign Origin/manufactured items, they are allowed to quote in Indian Rupees on FOR destination basis. However, the Board will not enter into any Trade Agreement such as high Sea Sale/deed etc. The Concessional Custom Duty and Excise Duty Exemption certificate will be supplied. In that case, the normal custom duty applicable should be borne by the supplier. The entire responsibility/charges upto destination should be borne by the supplier. Therefore excise duty and custom duty excluded price should be quoted. Taxes, other levies, insurance, Octroi, freight etc., if any should be indicated separately, No C/D forms will be issued against VAT/CST.
4. It may be noted that mere quoting lowest rates will not entitle any firm to get the order. The quality of the item being offered, the past performance supply etc. will also be taken into consideration. Prior to award of purchase order the buyer can call any details, explanation, regarding technical & financial aspect, including demonstration of the instrument/equipment.
5. The Tender is to be submitted "single stage-3 envelopes system" i.e. the first sealed envelope will contain the earnest money, the second sealed envelope will full information required to judge pre-qualification, earnest money, complete details and specifications of the instruments offered including the leaflets and

catalogues, list of credentials with documentary evidence i.e., purchase order etc., PAN No., Vat/Sales Tax Registration No., Affidavit for not being black listed, Commercial Terms & Conditions etc. It shall be marked "**Pre-qualifications, technical and commercial Bid No. WB/LAB-332/19-20/65 dated 20.01.2020 due on 04.02.2020 for supply of Scientific Equipments.**" The third envelope will contain **only price quoted by the bidder** in the form given at Annexure -II of this document and shall be clearly marked "Price Bid **No. WB/LAB-332/19-20/65, dated 20.01.2020** for instruments & equipment". All the above envelopes must be separately sealed and shall be kept in one envelope bearing the address of Pollution Control Board, Assam and superscribed with bold letter "**Tender for the Item no. ...**". The senders' address should be mentioned in all envelopes.

6. The list of instruments/equipments and their approximate quantity is given at **Annexure-V** and the detailed specification of the Instruments are given in the tender documents (Page No. 11-15). The quantity mentioned in the tender documents may be increased or decreased at the discretion of the Competent Authority in the Pollution Control Board, Assam without assigning any reason.
7. Item Code number(s) should be mentioned invariably on all envelopes.

Technical & Commercial part of the tender will be opened at **16.00 PM on 04.02.2020** in the office of the Pollution Control Board, Assam, in presence of the representatives of the Tenderers who would like to present. Sealed Price part of Technically and Commercially acceptable tenders will be opened on a later date in the presence of purchase committee of the Board.

8. The EARNEST MONEY shall be in the form of Demand Draft only in favour of "MEMBER SECRETARY, POLLUTION CONTROL BOARD, ASSAM" payable at GUWAHATI. Tender shall not be entertained where a Tenderer has not furnished adequate earnest money as specified in the Annexure –IV. In case of non-supply within stipulated time or the instrument supplied is found defective and not attended by the supplier, the Earnest Money deposited by the supplier will be forfeited.
9. The Firm who seek exemption from depositing earnest money being small scale industry or being registered with NSIC, DGS&D and other Government agencies which entitles them for exemption must submit the valid Registration Certificate covering the instrument offered by them along with the permissible value. The copy of Government Notification granting exemption from deposit of EMD must be submitted along with the techno- commercial part of tender along with the bid. (EMD Exemption will be granted only to those items specified in the certificate of Registration).
10. Unsuccessful bidders bid security will be discharged/ returned without any interest in the same form after the concerned purchase is finalized and that of successful bidders will be discharged without interest after the successful installation of the instrument.
11. The validity of Tender would be for a minimum period of 180 days from the date of opening of Tenders. A Bid valid for a shorter period may be rejected by the Board as non responsive.

12. The rates should be quoted both in words and figures. If there is discrepancy between words and figures, the amount mentioned in words will prevail.
13. The Bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person duly authorized to the contract. The letter of authorization should bear the signatures of only the authorized person of the firm. All pages of the Bid, except for un-amended printed literature shall be initial by the person or persons signing the bid.
14. To assist in the examination, evaluation and comparison of bids the buyer may, at its discretion, ask the Bidder for a clarification of its bid. However, no change in the price or substance of the bid shall be sought, offered, re-permitted.
15. The specifications are clearly mentioned in the document and the Bidder are requested to submit Bid only if their offer comply with these specifications. BIDS CARRYING THE STATEMENT LIKE "SPECIFICATION AS PER TENDER DOCUMENT" SHALL NOT BE ENTERTAINED. THE PRODUCT SPECIFICATIONS SUPPORTED BY TECHNICAL LITERATURE AND LIST OF USERS MUST BE ENCLOSED.
16. The nomenclature of the instruments and spares will be invariably same in Proforma Invoice, Invoice, Packing list and in other relevant papers in case the Bidder is allotted the purchase order.
17. With the submission of the Tender, the Bidders are deemed to accept the terms & conditions of the Tender.
18. The Supplier should attach a copy of financial bid (without cost/price figures) along with the technical bid to assess the item/components quoted in the bid.
19. The installation and commissioning of the instruments is the entire responsibility of the supplier. It must be done either by the principal/supplier or their authorized agents within one week of the receipt of the instruments by the Board.
20. The Bidder must sign each and every folio of the Tender.
21. The bidder should attach a separate list for the consumable/spares required for smooth operation of the instrument at least for three years (as optional items) and two copies of trouble shooting manuals, electric circuits etc. along with the bids.
22. The bidder should provide a complete list of spares and consumables required for operation and maintenance of the instruments along with bids.
23. The instrument for which Tenders are invited will have to be supplied as per terms & conditions laid in the purchase order. In case of non-observance of the order will be cancelled.
24. If the instrument supplied is found defective/unsatisfactory condition/short supply/other than specifications in the Purchase Orders, the same will have to be replaced at the suppliers' risk and cost. The Board will not pay freight and other charges for replacement.
25. The prices must be quoted item-wise i.e. basic price, taxes, packing forwarding, handling and installation charges etc. The charges must be quoted clearly and not in vague terms like "As Actual" "Approx" etc.
26. The warranty/guarantee of the instrument/equipment should be clearly mentioned in the Bid.

**27. MOST IMPORTANT**

**PLEASE NOTE THAT ANNEXURE-I OF THIS DOCUMENT MUST BE ENCLOSED WITH THE FIRST PART OF BID i.e. "TECHNICAL/COMMERCIAL BID AND ANNEXURE-II AND III WILL BE KEPT IN THE SECOND PART OF BID i.e. PRICE BID.**

**28. THERE IS NO NEED TO ENCLOSE THE ENTIRE TENDER DOCUMENT (SUPPLIED BY THE BOARD) WITH YOUR BID. ONLY ANNEXURE-I,II AND III NEED TO BE ENCLOSED AS PER INSTRUCTION STIPULATED IN PARA 23 AND OTHER RELEVANT PARAGRAPHS OF THIS BID.**

**29. Payment Condition:**

Full payment will be released on supply and installation of the system on good and satisfactory condition and furnishing performance security/performance Bank Guarantee equivalent to 5% of the purchase order value till warranty period. The performance security in the shape of Bank Guarantee be furnished by the principal supplier or their authorized agent from any Nationalized Bank. No proposal for advance payment will be allowed in any case. Proposal for advance payment, document and payment through bank will not be considered. Hence no preference will be given for such advance payment proposals.

**30. Annual Maintenance Contract:**

The bidder should quote the charge for annual maintenance contract after the warranty period for the instrument listed in **Annexure-V** of this tender document **at serial No. 1.**

**Annexure-I**

<b>APPLICATION FORM</b>		
<b>(To be filled by the bidder)</b>		
1)	Name and full address of the Bidder including Telegraphic Address/Telex No. and Fax No. E-mail.	
2)	Name and Designation of the Head of the Firm/supplier and his Telephone No.	
3)	(i) In case the supplier is located out of ASSAM specify the Address/ Authorised Distributor's or Agent's Address in Assam, if any.	
	(ii) Name, Designation, Address Telephone & Fax Numbers of the Authorised Person who may be Contacted during the process of the purchase concerned under this document (Applicable for all the suppliers)	
4)	Item Code Number(s) & description of item quoted for.	
5)	Whether Earnest Money Deposited (Amount: Rs.)	
6)	If yes, Demand Draft No, Date and Name of issuing Bank.	
7)	Validity of Tender	
8)	If the tender documents are accepted in full (Yes or No)	
9)	Income Tax Clearance Certificate attached (Latest) (Yes or No) with PAN Number.	

Place:  
Date :

Legally Binding Signature with stamp



**BID FORM****No.**

Details showing quantity, specification and other details of the instruments offered (to be filled by the bidder and must be kept in "Price Bid" part of the Tender)

SI No and Item code Number of instruments as per our tender Document	Name of Instrument	The Specification offered by the Bidder	Difference in Specifications of tender document and that of Bid, if any	Unit Price (in Rupees excluding rates at col. no. 6)	Taxes and other expenditures (Sales Tax, C.S.T, freight, cost of installation & training (in case of indigenous items)etc.	Total Amount in Rupees FOR PCBA, Guwahati
1	2	3	4	5	6	8

NOTE:- If this sheet is not sufficient to accommodate the bid the additional sheets containing the same proforma but all such sheets including this one must be signed by the Bidder along with the seal. This Annexure must enclose in the Proforma Invoice price bid for item wise. Separate Bid form should be attached against each item, quoted for.

Signature with date & stamp of the bidder

**UNDERTAKING**

DATE \_\_\_\_\_

TENDER NOTICE NO \_\_\_\_\_

TO

**THE MEMBER-SECRETARY  
POLLUTION CONTROL BOARD, ASSAM  
BAMUNIMAIDAM, GUWAHATI,781021.**

Sir,

Having examined the conditions of Tender Document and specifications of the instruments, the receipt of which is hereby acknowledged. We, the undersigned, offer to supply, install and commissioning the following:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13

(Please add additional pages, if required). The above supply, installation and commissioning shall be in conformity with the specifications and conditions of supply.

We undertake if our bid is accepted to deliver the instruments quoted by us, we shall deliver and install within the period indicated by us in our offer, failing which, we have no right to claim the offer.

We agree to abide by this bid for a period of 120 days from the date fixed for Bid opening and it shall remain binding upon us and may be accepted at any time before expiration of that period.

We are submitting a Demand Draft for Rs.....in favour of "Member Secretary, Pollution Control Board, Assam", towards the Earnest Money.

This Bid, together with your written acceptance thereof in your notification of award shall constitute a bidding contract between us.

We understood that you are not bound to accept the lowest or any bid you may receive.

Dated this.....day of.....2020

Signature of authorized Person, Name with Stamp & full Address.

**ANNEXURE – IV**

**SCHEDULE OF EARNEST MONEY**

<b>Item code No.</b>	<b>Name of Instruments/ Equipment</b>	<b>Units</b>	<b>Earnest Money amount is shown in Rupees. EMD should submit through Demand Draft in INR</b>
1.	Atomic Absorption Spectrophotometer – Flame , Vapour Generation Accessory(VGA)	1 no.	Rs. 90,000.00

**TECHNICAL SPECIFICATIONS OF ATOMIC ABSORPTION SPECTROPHOTOMETER (AAS) –  
FLAME with Vapour Generation Accessory (VGA) having Latest Technology.**

Sn. No.	Specifications	Requirement
1.0	<b>Instrument Composition</b>	
	Atomic Absorption Spectrophotometer (FLAME/VGA)	One set – System for Flame with D2 background correction facility. Desirable: - Fast Sequential capability using hollow cathode lamps in the flame mode of operation, where all the elements (as mounted in the lamp holder) in a sample can be analysed in a single aspiration. The system should have an option for Furnace for future upgradation.
	Unit of Burner for Flame (Air acetylene and nitrous oxide acetylene)	One set each
	Vapour generation assembly (VGA)	One set
2.0	<b>Technical Specifications</b>	
	Atomic Absorption Spectrophotometer	Computer controlled with built-in flame emission mode
	Wave length range	180-900 nm wavelength or better.
	Sensitivity	Sensitivity at least 0.9 abs for 5 µg/ml aqueous copper (Cu) standard solution with < 0.5 RSD or better
	Detection Limit	1. Easily cover the drinking water standard as specified in IS 10500:2012 with respect to trace elements. 2. Minimum detection limit for Arsenic & Mercury should 1.0 µg/L & 0.1 µg/L respectively or better.
2.1	<b>Optics</b>	Double beam dual blazed/holographic Monochromator
	Focal Length	At least 250 mm focal length
	Resolution	Grating 1800 lines/mm or more
	Width	Automatic bandwidth of 0.2 to 2.0 nm or better.
2.2	Flame Atomizer	All titanium or equivalent burner with impact bead / Flow spoiler, Premix Design
	Movement	Automatic Movement into the sample compartment
	Affect from Acids/Organic solvent	Resistant to acid solutions (i.e. 5% HF, HCL, H2SO4 & HNO3) or organic solvents e.g. Methyl isobutyl Ketone (MIBK)
	Flame Alignment in liquid beam	Fully automatic, optimized with motorized burner mount for vertical and horizontal burner adjustment.
	Spray Chamber	Corrosion resistant.
2.3	Nebulizer	High precision able to provide manually adjustable uptake rates material of the nebulizer and related Venturi should be inert to acid solutions and organic solvents, such as MIBK.
2.4	Flame Control	Computer controlled ignition
2.5	Gas Control	Computer controlled with oxidant and fuel gases monitoring to monitor constant fuel/oxidant ratio ignition.
2.6	Safety Function	Interlocking system to prevent ignition

<b>Sn. No.</b>	<b>Specifications</b>	<b>Requirement</b>
2.7	Essential Interlock Monitors	Burner type as well as its presence in position, air selector, flame sensor, liquid trap level, gas supply pressures and air supply anywhere in the network of gas tubing in the system
2.8	Automatic Lamp Selection Function	Computer controlled Hollow cathode lamp selection and alignment,
	Lamp Holder	At least 4 lamp holder with built-in Power supplies for hollow cathode lamps and electrodeless discharge lamps or equivalent.
	Operating Parameter setting	Automatic setting
2.9	Read out/ Display	Display facility for absorbance as well as concentration, Display of errors or error codes, absorbance range at least up to 2.0 Abs.
	Scale expansion	Scale expansion at least up to 100X.
	Integration time	Integration time should cover at least 0.2 to 50 seconds range
	Measurement	Measurements of mean, RSD and CV, Background only mode, integration of peak height and peak areas
2.10	<b>Accessories/Spares with the Flame AA System</b>	
2.10.1	Hollow Cathode Lamps	14 Hollow Cathode Lamps. One lamp for each of the following elements – Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Nickel, Selenium, Silver, Strontium, Vanadium and Zinc.
2.10.2	Vapour generation assembly	Should be continuous flow based hydride/mercury vapour generator for determination of Hg, As, Se, Sb, Te, Bi & Sn at µg/L concentration.
	Precision	Precision of better than or at least 1% at ppb levels of mercury, arsenic etc.
	Flame Arrestor	Flame arrestor should be provided in the tube which connects the assembly to the absorption cell.
	Cell design holder	The design of the cell holder should give a firm and easily adjustable (for alignment) mounting on the burner head.
	System accessories	Complete with necessary reagent bottles, connectors etc.
2.10.3	Air Compressor with Air Filter or equivalent Air Service Unit	Complete with pressure regulator quite in operation, necessary tubing and connectors and should meet the air supply requirements of AAS operation.
	Oil free Pump	Oil-free, less noise pump with moisture trap or equivalent.
	Corrosion resistant	Resistant to acidic vapour and the drain value (if any) should be made of stainless steel or equivalent corrosion resistant material.

Sn. No.	Specifications	Requirement
3.0	<b>Software</b>	
3.1	Application Software	<p>Programme facility with multitasking software.</p> <p>Should provide complete control of instrument with instrument status display and its various accessories Provide accurate and reproducible time averaged, integration, non-averaged integration, multi-level calibration</p> <p>Software should handle instrument linear absorbance reading, concentration, or emission intensity, integration time, built in statistics, calibration equation control, slope of analytical curve using operator selective calibration standard</p> <p>Built in interface for computer connection and use of optional accessories</p> <p>Comprehensive quality control protocols facility including blank, multiple quality control standards, QA/QC audit trail and calibration failure.</p>
3.2	<b>Computer System</b>	
	Make	Reputed brand such as HP/Compaq/Dell etc. compatible with the instrument.
	Processor	Intel Core i7 processor with 3.60 GHz
	RAM	8 GB RAM
	HDD	1 TB
	Monitor	21" TFT-LCD Flat Colour (Digital)
	Ports	2 Serial, 1 parallel and 4 USB front 4 Rear USB2 Port, 1VGA 4 bays (2 external & internal) with LAN 1PS
	Key board	Cordless, latest multimedia (HP / Microsoft)
	Mouse	Cordless, Optical mouse with pad
	Ethernet	64 bit auto selectable 10/100 MBPS
	Graphics	Internet ready with integrated Graphics
	Sound	Integrated sound card and inbuilt stereo speakers
	Printer	Branded multicolour LaserJet Printer
3.3	<b>Operating Software</b>	Pre-Loaded operating system with Licensed CD
		Latest MS Office, Professional with media, manual and Licensed CD (Compatible with main Instrument)
		Preloaded Antivirus with latest version of 5 years or more lifetime along with Licensed CD
4.0	<b>Quality Control Support</b>	Supplier should provide Certificate on Installation Qualification (IQ), Performance Qualification (PQ) & Operational Qualification (OQ) during the installation of the instrument. The activity should cover limit of detection (LOD) and limit of quantification (LOQ).
5.0	<b>Additional Items</b>	Following items to be supplied.
5.1	<b>Gas Regulators</b>	
	Nitrous-oxide gas regulator – Two numbers	Nitrous-oxide gas regulator (two stage) with heater, with necessary tubing and connectors. Necessary transformer should be provided to transform this supply to the requirements of the heater The heater should work on 230 ± 10 volts 50 Hz AC power supply.
	Acetylene gas regulator – Two numbers	Acetylene gas regulator (two stage) with necessary tubing and connectors
	Argon gas regulator – Two numbers	Argon regulator (two stage) with necessary tubing and connectors

Sn. No.	Specifications	Requirement
5.2	<b>Gas cylinder (filled with relevant Gas)</b>	
	Nitrous Oxide Gas Cylinder – One number	High pressure seamless steel cylinder fitted with high purity Nitrous oxide gas. Should be ISI marked conforming to IS 7285 specifications. Flat bottom with valve as per complete neck ring and cap painted as specified under Gas Cylinder Rules along with Hydraulic test certificate and explosive certificate from Chief Controller of Explosives, Nagpur as per BIS standards.
	Acetylene Gas Cylinder – One number	High pressure seamless steel cylinder fitted with high purity Acetylene gas having gas capacity 7 m <sup>3</sup> water capacity 47 liters. Cylinder should be ISI marked conforming to IS 7285 specifications. Flat bottom fitted with valve as per IS: 3224. Complete with neck ring and cap painted as specified under Gas Cylinder Rules, 1981 along with Hydraulic test certificate, ISI inspection / Test Certificate. Explosive Certificate from Chief Controller of Explosives, Nagpur as per BIS standards.
	Argon Gas Cylinder with gas – One number	High pressure seamless steel cylinder fitted with high purity Argon gas having gas capacity 7 m <sup>3</sup> water capacity 47 liters. Cylinder should be ISI marked conforming to IS 7285 specifications. Flat bottom fitted with valve as per IS: 3224. Complete with neck ring and cap painted as specified under Gas Cylinder Rules, 1981 along with Hydraulic test certificate, ISI inspection / Test Certificate. Explosive Certificate from Chief Controller of Explosives, Nagpur as per BIS standards.
5.3	Vent and Fuming Hood assembly	Stainless Steel Fuming Hood along with exhaust blower having efficiency to evacuate acid fumes of 6 – 7 m <sup>3</sup> / minute. Stainless steel duct of 12 ft. length.
5.4	Operation kit	Manufacturers Standard Operation Kit including all required items, tubing, fittings for startup /regular operation of instrument
5.5	Operation/ Maintenance manual	Operation and Maintenance manual for each unit
5.6	Analytical Manual	Analytical Manual including applications for Flame, VGA.
5.7	Service manual	Service Manual with one set of required tools for each system / unit
5.8	Application notes	Application notes for trace metal analysis in environmental, biological, geological, metallurgical and industrial samples.
5.9	Consumables	For five years operation for each of the following units: 1. Flame AAS (basic unit, burner system) – one set each including O-rings etc.
		2. Vapour generation assembly – tubes, glass items, Cell & Cell holder
6.0	WARRANTY	Comprehensive 5 years' warranty with spares from the date of successful installation and commissioning of the instrument should be covered. Warranty will start from the date of complete installation. {Optional – the supplier may also quote annual maintenance contract (AMC) on regular basis beyond the warranty period for a three years}.
7.0	OPERATION AND MAINTENANCE TRAINING	Two weeks (at installation site) training to be provided to PCBA Scientist on software training, operation, maintenance and troubleshooting aspects of instrument.

Sn. No.	Specifications	Requirement
8.0	<b>GENERAL CONDITIONS OF SUPPLY</b>	
8.1		The instrument and all its sub units should operate on 230 ± 10 volts 50 Hz power supply.
8.2		The supplier / manufacturer should have Indian agent to provide after sales service.
8.3		The main unit and all the sub units of the instrument should be serviced by the Indian representative of supplier.
8.4		The Bidder should be a manufacturer/ authorized representative of a manufacturer, who must have designed, manufactured, tested and supplied two numbers of such equipment similar to the type specified in the past five years, which shall be in successful operation for at least 2 years as on the date of bid opening.
8.5		The bidder should furnish the information on past supplies and their satisfactory performance.
8.6		Bidders shall invariably furnish documentary evidence (client's certificate – at least five) in support of the satisfactory operation of the equipment as specified above.
8.7		Notwithstanding anything stated above the purchaser reserves the right to assess the capability and capacity of the bidder to perform the contract, should the circumstances warrant such an assessment in the overall interest of the purchaser.
8.8		Pre installation requirement if any to be provided.



## **CHECK LIST FOR THE BIDDER**

1. Bid on original Tender form only.
2. Separate EMD against each item.
3. Earnest money or necessary documentary proof for exemption of earnest money with the part 1 of the bid.
4. Price bid must be Part III of the bid in the form provided at Annexure II of the tender document.
5. The Basic Price, Taxes, Packing, Forwarding, Handling, Transportation Insurance, Installation charges etc. must be quoted clearly. Do not use vague terms like "As Actual, Approximately etc".
6. Do not use the terms As per Specification of Tender Documents' in respect of instruments. There should be proper write up of production quoted for supported with printed leaflets literature.
7. In case the bidders desirous to quote more than one item, separate envelope should be submitted (technical & price bid) for individual item super scribing item code number and name.
8. With technical bid, the bidder should provide a copy of the price bid format (giving details of the items, accessories, spares etc.) without specifying the price other than one mentioned in annexure-II of this tender document.

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