

## **TENDER NOTICE FOR INSTRUMENTS/EQUIPMENT**

Global Positioning System (GPS), Microscope, Bacteriological Incubator, Deep Freezer, Air Conditioners – Split Type, EPABX System, Aeration Compressor, Filtration Assembly, Velocity Meter (Air), Balance – Single Pan (Digital), COD Digestion Assembly, Stack Monitoring Kit with NOx apparatus.



**CENTRAL POLLUTION CONTROL BOARD**  
**ZONAL OFFICE - CENTRAL**  
**3<sup>rd</sup> Floor, Sahkar Bhawan**  
**North T.T. Nagar**  
**Bhopal – 462 003**

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## CENTRAL POLLUTION CONTROL BOARD

ZONAL OFFICE - CENTRAL

3<sup>rd</sup> Floor, Sahkar Bhawan

North T.T. Nagar

Bhopal – 462 003

(Telephone: 0755-2775385, 2775386; Fax: 0755-2775587)

### **TENDER NOTICE**

ZO/BPL/Lab(Mang)/2011-12/Inst. & Equipt./

Date: 31.01.2012

Sealed Tenders are invited on behalf of the Member Secretary, Central Pollution Control Board from Manufacturer/Suppliers in India for the supply of various Laboratory Instrument / equipments i.e. **Global Positioning System (GPS), Microscope, Bacteriological Incubator, Deep Freezer, Air Conditioners – Split Type, EPABX System, Aeration Compressor, Filtration Assembly, Velocity Meter (Air), Balance – Single Pan (Digital), COD Digestion Assembly, Stack Monitoring Kit with NOx apparatus.**

The Tender Documents and detailed specification of the instruments/equipment can be obtained from Zonal Office (Central), 3rd Floor, Sahkar Bhawan, T.T. Nagar, Bhopal – 462003 in person or by sending a Demand Draft **on or before 23.02.2012**. The tender document is also available at Website: [www.cpcb.nic.in](http://www.cpcb.nic.in) which can be downloaded and submitted with its price **Rs.400/-** in the form of **Demand Draft** along with tender documents.

### **TENDER DOCUMENT:**

Price of document	: Rs.400/- by hand (cash/DD) or Rs.500/- by Post (DD) in favour of <b>Central Pollution Control Board, payable at Bhopal.</b>
Earnest Money	: As indicated in the tender document.
Date for Sale of Tender form	: 02.02.2012 to 23.02.2012 on all working day (11:00 AM to 5:00 PM)
Last date & time for Submission of Tenders	: 23.02.2012, up to 5:00 PM
Opening of Tenders	: 24.02.2012 at 11:00 AM

(R.S. Kori)  
Zonal Officer &  
Additional Director



**CENTRAL POLLUTION CONTROL BOARD  
(MINISTRY OF ENVIRONMENT AND FORESTS)  
ZONAL OFFICE (CENTRAL)  
3<sup>RD</sup> FLOOR, SAHKAR BHAWAN  
NORTH T. T. NAGAR  
BHOPAL-462 003**

(TELEPHONE: 0755-2775385, 2775386; FAX: 0755-2775587)

**TENDER NOTICE**

**No. ZOB/Lab (Mang)/2011-12/Inst. & Equipt./**

**Dated: 31-01-2012**

Sealed Tenders are invited on behalf of the Member Secretary, Central Pollution Control Board from Manufacturer/Suppliers in India for the supply of various Laboratory Instrument / equipments as listed below:

**Global Positioning System (GPS), Microscope, Bacteriological Incubator, Deep Freezer, Air Conditioners- Split Type, EPABX System, Aeration Compressor, Filtration Assembly, Velocity meter (Air), Balance- Single Pan (Digital), COD Digestion Assembly, Stack Monitoring Kit with NOx apparatus.**

01. The Tender Documents along with detailed specifications of the instruments can be obtained from Zonal Office (Central), 3<sup>rd</sup> floor, Sahakar Bhawan, T.T. Nagar Bhopal, 462003.
02. The request for tender documents by post will be accepted up to 23.02.2012. Request received by post after above mentioned date will not be entertained in any case.
03. The Earnest Money as indicated in Bid document must be submitted by the Bidder along with the Tender in the form of Demand draft only drawn in favour of CENTRAL POLLUTION CONTROL BOARD payable at Bhopal.
04. CPCB will not be responsible for any delay in receipt of tender document sent by post.

Other details are as follows:

- |                                 |  |
|---------------------------------|--|
| Sale of tender document         | : 02.02.2012 to 23.02.2012 on all working days.<br>(11.00 AM to 5.00 P.M.)   |
| Cost of tender document         | : Rs.400/- by hand (cash/DD) or Rs.500/- by post<br>(DD) in favour of <b>Central Pollution Control Board,<br/>payable at Bhopal.</b> |
| Earnest Money                   | : As indicated in the Tender Document  |
| Last date & time for submission | : Up to 5.00 PM on 23.02.2012  |
| Date of opening of tender       | : At 11.00 AM on 24.02.2012  |

Bidders using downloaded tender forms must submit separate tender fee by Demand Draft along with technical bid drawn in favour of Central Pollution Control Board, Bhopal. Details of tender document, terms & conditions and Technical Specification may kindly be seen at our website [www.cpcb.nic.in](http://www.cpcb.nic.in)

Zonal Officer &  
Additional Director



**CENTRAL POLLUTION CONTROL BOARD  
(MINISTRY OF ENVIRONMENT AND FORESTS)  
ZONAL OFFICE (CENTRAL)  
3<sup>RD</sup> FLOOR, SAHKAR BHAWAN  
NORTH T. T. NAGAR  
BHOPAL-462 003**

**1.0 GENERAL TERMS AND CONDITIONS:**

- 1.1 This document contains the following:
  - i) Copy of the Local Competitive Bidding Notice
  - ii) General Terms and Conditions of Bid
  - iii) Terms and Conditions for Submission of Bid
  - iv) Payment Terms
  - v) Application Form
  - vi) Undertaking
  - vii) Bid Forms
  - viii) Schedule of Earnest Money to be deposited along with Tender
  - ix) Quantity of Instrument with place for delivery/installation
  - x) Check List of documents/enclosures.
  - xi) Detailed specification of the instruments
  
- 1.2 The Tender Document is not transferable by the purchaser. The bid forms annexed in the tender Document may be used for bidding. Documents / forms downloaded from the website can also be used. Photocopies of Bids will not be considered. However, the additional sheets containing the same proforma may be used for each item. Additional sheet attached other than original provided by the Board with this document must be signed by the bidder.
  
- 1.3 The tender will not be accepted from the firm to whom the document is not issued by the Board and the bid downloaded from WEBSITE without tender document price.
  
- 1.4 Board will not be responsible 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.
  
- 1.5 No bid document will be sold after the last date of sale of Tender Document in any case.
  
- 1.6 The bidder shall examine all instructions, forms, terms and specifications mentioned in the bid document. False information provided in bid shall be on bidder's risk and may be liable for rejection of bid in part or whole.
  
- 1.7 The bidder should be a manufacturer or authorized Indian Supplier / Dealer/ Distributor of the instrument/equipment and shall submit the document in support.

- 1.8 The Board shall have all rights to extend the last date of submission of tender and opening of tenders. The right of acceptance of Tender shall be with the Additional Director and Zonal Officer of CPCB, ZO, Bhopal on recommendation of Local Purchase Committee. Central Pollution Control Board does not bind to accept the lowest tender and shall have right to reject any or all of the tenders received without assigning any reason.
- 1.9 Documents, literature, diagrams/ leaflets, samples etc., enclosed in the Tender shall be the property of the Central Board as supportive document.
- 1.10 The warranty period for all items shall be Three Years (03 Yrs.) starting from the date of successful commissioning of the instruments / equipment. Under this warranty upon the receipt of such notice supplier/agent shall within the period specified, repair/replace the defective instrument or spare parts thereof at the ultimate destination of installation. The supplier/agent/dealer / distributor shall take over the replaced parts / goods, in the event of any repair of defects or replacement of defective material. In such cases, the warranty for the repaired / replaced materials shall be extended till the left over period of warranty.
- 1.11 The Tender would be regarded as turned down, if no award of contract has been issued till the expiry of the Tender validity. No separate communication will be made in this regard.
- 1.12 The Laboratory Instruments / equipment have to be supplied in standard packing.
- 1.13 If the last date for sale, submission and opening of Tenders falls on any Government declared holidays, the next working day at the same time will be considered as last dates of the same.
- 1.14 The bid shall contain no interlineations, erasures or overwriting words except as necessary to correct errors made by the bidder, in such case, correction shall be initialed by the person or persons signing the bid.
- 1.15 Late and delayed tenders will not be considered.
- 1.16 It is advised that the suppliers should send the Tender through Registered Post with acknowledgment. However, the tender document may also be dropped in Tender Box kept in Zonal Office on or before 30.01.2012 till 5.00 PM. In no case, Tender should be handed over to any employee of the Board.
- 1.17 Canvassing in any form will disqualify the Bid.
- 1.18 Request for the Tender Document for bidding through E-mail, Telegram, Telephone, Money Order and Tele-fax shall not be entertained.
- 1.19 All the Tenders should be addressed to:

**THE ZONAL OFFICER & ADDITIONAL DIRECTOR  
CENTRAL POLLUTION CONTROL BOARD  
ZONAL OFFICE (CENTRAL)  
3<sup>RD</sup> FLOOR, SAHKAR BHAWAN  
NORTH T. T. NAGAR  
BHOPAL- 462 003 (M.P.)**

## **2.0 SUBMISSION OF BID:**

- 2.1 The bid must accompany Annexure-I, II, IV and tender fee in case of down loaded document with Techno Commercial part of Bid. Annexure-III (Financial Bid) duly filled in and signed by the Bidder along with the seal of the Firm should be kept in separate envelope.
- 2.2 The Bidders are requested to quote the item-wise rates and total price of each instruments/ equipment separately including the Govt. levies, transportation and other expenditure & F.O.R. to our laboratory at Bhopal.
- 2.3 Bidder can quote the rates for all the instruments / equipment or some of the instruments/ equipment against on tender enquiry. The Central Pollution Control Board reserves the right to accept the tender in full or in part.
- 2.4 The tender is to be submitted in single stage-3 envelope system containing three (3) envelopes i.e. the first sealed envelope will contain the EMD, second envelope will contain full technical information required to judge pre-Qualification (Annexure-I, II & IV), earnest money deposit (EMD) separately for each instruments/equipment, complete details and specification of the instruments offered including the leaflets and catalogues, list of credentials with documentary evidence i.e. purchase / work order satisfactory performance certificate from recognized environmental institutes/laboratories approved under EPA/State Pollution Control Board/PCCs etc. Income tax clearance certificate, Sales Tax Registration No., Affidavit for not being black listed, Commercial Terms and Conditions etc. It should be marked as **Pre- qualification Technical and Commercial Bid No.ZOB/Lab(Mang)/2011-12 due on 23.02.2012 for instruments /equipment**. The third envelope will contain only price quoted by the bidder in the form given at **Annexure-III** of this document and shall be clearly marked as **Price Bid No.ZOB/Lab(Mang)/2011-12 due on 23.02.2012 for instruments/equipment**. The bidders may specify about instruments/ equipment for which they are furnishing bids. Both the above envelopes must be separately sealed and shall be kept in one envelope bearing the address of Central Pollution Control Board and super scribed in bold letters---**TENDER FOR (Name of the Instruments/Equipment)** due on 23-02-2012 at 05:00 PM.

- 2.5 Technical part of the tender will be opened on 24.02.2012 at 11:00 AM for LCB in CPCB, Bhopal office in presence of representative of Bidders who wants to be present. Sealed Price part of technically and commercially qualified bids shall be opened on later date.
- 2.6 The bidders are to deposit the amount as per schedule at **Annexure-V** separately for each instruments/equipment quoted by them towards the earnest money along with tender in the form of **Bank Draft only in favour of Central Pollution Control Board payable at Bhopal** and earnest money shall not be accepted in any other form. The earnest money may be forfeited if a bidder withdraws its bid validity specified in tender document or fails to supply the instruments within specified period in tender document or at short notice by the Board. Tender shall not be entertained where a tenderer has not furnished adequate earnest money in prescribed & acceptable form. In case the instrument delivered is found defective and not attended by the supplier, the earnest money deposited by the supplier will also be forfeited.
- 2.7 The Firm seeking exemption from depositing earnest money being small scale industry or being registered with DGS&D and other Govt. agencies which entitle them for exemption must submit the valid registration certificate covering the instruments offered by them along with the permissible value. The copy of Government Notification granting exemption from deposit of EMD must be submitted in Technical part of the tender along with the bid. (Proof of the exemption obtained against a particular item being quoted should be attached).
- 2.8 Unsuccessful bidders EMD will be discharged / returned without any interest in the same form after the concerned purchase is finalized or within four months whichever is earlier and that of successful bidders will be discharged without interest within one month of the successful installation and commissioning of the instrument and on furnishing the Performance Bank Guarantee (PBG) @ 10 % of the supply order.
- 2.9 The validity of Tender would be **upto March 31, 2012** from the date of opening of Tenders. A Bid valid for a shorter period may be rejected by the Board as non responsive.
- 2.10 The rates should be quoted both in words and figures.

- 2.11 Arithmetical error will be rectified on the following basis:- If there is discrepancy between the unit price and total price that is obtained by the multiplying the Unit Price and quantity, the unit price shall prevail and the total price shall be corrected. If there is discrepancy between words and figures, the amount in words will prevail.
- 2.12 Tenders not in proper sealed cover or received through telegraphically or E-mail Fax / telex or conditional will not be entertained and will be rejected without assigning any reason.
- 2.13 The Bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person duly authorized. The letter of authorization should bear the signatures of the authorized person of the firm only. All pages of the Bid, except for un-amended printed literature shall be initialed by the person or persons signing the bid.
- 2.14 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 on telephone only. However, no change in the price or substance of the bid shall be sought, offered, re-permitted.
- 2.15 Eventual suggestions for modification or subsidiary Tenders are principally not admissible.
- 2.16 The specifications are clearly mentioned in the document and the Bidder is requested to submit Bid only if their offer strictly comply to these specifications. **Please note that no deviation in the required specification will be permitted.** The bidding for the instruments having different specification will be on Bidder's risk as the Board will not entertain such Bids. 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.
- 2.17 The placement of work order/purchase order will be according to technical evaluation of the Tender and after consideration of its price worthiness.
- 2.18 The price to be given in the Tender are fixed prices, irrespective of rise in Materials prices and increase in taxes etc., till the delivery of the overall supply. No request in regard to increase in the price of instruments or in taxes etc., will be entertained after submission of the tender. However, if there is decrease in taxes as a result of Govt. policy decision after finalization of the bids, in that circumstance, the benefit will go to the Board.

- 2.19 The nomenclature of the instruments and spares will be invariably same in Proforma Invoice, Invoice, Packing list and all other relevant papers in case the Bidder is awarded with the purchase order for supply against its offer.
- 2.20 With the submission of his Tender the Bidder accepts the conditions of the Tender.
- 2.21 If the instrument supplied is not in conformity with the specification other than asked for, it will have to be replaced at the risk and cost of the supplier. No Freight and other charges for export and re-shipment will be paid by the Board.
- 2.22 The installation 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 month of the receipt of the instruments in Zonal Office. The supplier or their authorized Agent should be in touch with Zonal Office to know the exact day of receipt of material supplied/dispatched by them.
- 2.23 The list of instruments/equipment, their approximate quantity and point of delivery is given at **Annexure -VI** and the detailed specification of the instrument are given in the tender document. The quantity mentioned in the tender document may be increased or decreased at the discretion of the Competent Authority in the Central Board without assigning any reason.
- 2.24 Each and every folio of the Tender must be seal & signed by the Bidder.
- 2.25 Bidder can quote the rates for all the instruments or some of the instruments. The Bid shall be considered only for those instruments for which the rates have been specifically quoted. The Zonal Officer further reserves the right to accept the Tender for all the instruments or some of the instruments for which the Tenderer has quoted the Bid. 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 bid. The bidder should provide a complete list of spares and consumables required for operation and maintenance of the instruments separately along with the price list.

- 2.26 The after sales service is most important to be considered for Comparison of the bids. Bid of those firms who do not have sufficient infrastructure facilities to provide after sales service during warranty period will not be considered.
- 2.27 In case of proprietary item, the Proprietary Article Certificate (PAC) issued by the principal supplier should be attached. The price should be quoted on F.O.R. on site (CPCB, Zonal Office, Bhopal).
- 2.28 The prices must be quoted item-wise i.e. Basic price, taxes, Packing & Forwarding and Transportation charges, Insurance, Installation charges etc. The charges must be quoted clearly and not in vague terms like "As Actual "Approx. Etc. The supplier will be held liable for any damage, theft or loss during transit.
- 2.29 The firm whosoever getting the award of work is to sign an integrity Pact Contract with CPCB as detailed in Annexure-VII of this tender document.

### **3.0 PAYMENT CONDITIONS:**

- 3.1 100% payment will be released on supply, installation, satisfactory commissioning of the systems /instruments in full, and furnishing performance security equivalent to 10% of the purchase order value valid till warranty period. The performance security in the shape of Bank Guarantee, be furnished issued from any nationalized bank. Advance payment will not be considered in any case. The performance security amount will be refunded on completion of the warranty period without any interest.
- 3.2 All disputes or differences arising out of or in connection with the contract and supply of any instruments / equipment assigned under the same (whether during the progress of the work or after their completion, determination, abandonment or breach of the contract) shall be referred to the Competent Authority i.e. the Chairman, Central Pollution Control Board, Delhi and the decision of Chairman shall have binding to the both parties.

### **4.0 FORCE MAJEURE:**

- 4.1 Vendor shall not be considered in default if delay in delivery occurs due to causes beyond his control such as acts of God, natural calamities, civil wars, strikes, fire, frost, flood riots and acts of unsurpassed power. Only those causes, which have duration of more than 7 calendar days shall be considered cause of force majeure. A notification to this effect duly certified by the Local Chamber of Commerce/Statutory Authorities shall be given by the vendor to Zonal Office, CPCB, Bhopal by registered letter. The order may be cancelled in case of deliberate delay made by supplier other than causes of force majeure. Such cancellation would be without any liability whatsoever on the part of purchaser.

**APPLICATION FORM**  
**(To be filled by the bidders)**

1. Name and full address of the Bidder including Address and Fax No.: \_\_\_\_\_  
\_\_\_\_\_
2. Name & Designation of the Head of the Manufacturing Firm/  
Supplier / Dealer and Contact No. : \_\_\_\_\_
3. (A) Address of Authorized Dealer / Distributer's in M.P., if any : \_\_\_\_\_  
(B) Name, Designation & Contact number of the other person  
authorised by bidder for any technical clarification. : \_\_\_\_\_
4. Total value of tender submitted : \_\_\_\_\_
5. Whether earnest money deposited (Yes or No) : \_\_\_\_\_
6. If yes, Demand Draft No. , Date & name of the issuing bank : \_\_\_\_\_
7. Validity of Tender : \_\_\_\_\_
8. Whether the tender conditions are accepted in full (Yes or No) : \_\_\_\_\_
9. Latest Income Tax Clearance Certificate attached (Yes or No) : \_\_\_\_\_
10. PAN / TIN No. with issuing Date : \_\_\_\_\_

Place:

Date:

(Signature with Date & Stamp of the Bidder)

**ANNEXURE-II**

**TECHNICAL BID FORM**

S. NO.	Code No. of item	POINT WISE COMPLIANCE OF THE SPECIFICATIONS (Yes OR No)																Total Compliance
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	
1.																		
2.																		
3.																		
4.																		
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		
11.																		
12.																		

**Note: Separate technical specification broacher / leaflet must be attached for justification.**

(Signature with Date & Stamp of the Bidder)

**FINANCIAL BID FORM**

**ANNEXURE-III**

<b>S. No.</b>	<b>Code No. of item</b>	<b>Name of the instrument</b>	<b>Quoted Unit Price (in Rs.)</b>	<b>Total Taxes (in Rs.)</b>	<b>Insurance Charges, if any (in Rs.)</b>	<b>Freight Charges (in Rs.)</b>	<b>Installation Charges , if any (in Rs.)</b>	<b>Less amount under buy-back (in Rs.)</b>	<b>Total Price (in Rs.)</b>
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									
11									
12									

**NOTE:-** If this sheet is not sufficient to accommodate the bid details, the additional sheets containing the same proforma (with seal and sign of bidder) may be used.

(Signature with Date & Stamp of the Bidder)

**UNDERTAKING**

TENDER NOTICE NO.

DATE:

To,  
The Zonal Officer & Additional Director  
Central Pollution Control Board  
Zonal Office (Central)  
3<sup>rd</sup> floor, Sahkar Bhawan  
North T. T. Nagar  
Bhopal-462 003 (M.P.)

Sir,  
I/We have examined the conditions of Tender Document and specifications of the instruments/equipment. I/We, offer to supply, delivery and successful installation of the following instruments/equipment:

Sl. No.	Code No. of Item	Name of the instrument/equipment
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		

(Please add additional pages, if required).

The above supply, installation shall be in conformity with the specifications and conditions of supply.

We undertake to deliver & installation of the instruments quoted within the period indicated by us in our offer if bid is accepted.

We agree to abide by Terms & Conditions of bid with validity of quoted prices **upto 31<sup>st</sup> March, 2012** from the date of bid opening and it shall remain binding upon us.

We are hereby submitting a **Demand Draft for Rs..... in favour of "Central Pollution Control Board", Bhopal** 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.....2012

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

**SCHEDULE OF EARNEST MONEY (EMD)**

<b>Sl. No.</b>	<b>Name of the Instruments / equipment</b>	<b>Quantity</b>	<b>EMD (in Rs.)</b>
1.	Global Positioning System (GPS) with accessories	02 nos.	1,200
2.	Microscope with all accessories	01 no.	1,000
3.	Bacteriological Incubator with digital temperature controller	01 no.	1,000
4.	Deep Freezer with accessories	02 nos.	1,000
5.	Air Conditioners- Split Type with Voltage Stabilizer	02 no.	1,000
6.	EPABX System with all accessories	01 no.	2,000
7.	Aeration Compressor with all accessories	01 no.	1,000
8.	Filtration Assembly with suction pump and accessories	01 no.	1,000
09.	Velocity meter (Air) with all accessories	01 no.	500
10.	Balance- Single (Digital) with all accessories	01 no.	500
11.	COD Digestion Assembly with all accessories	01 no.	1,500
12.	Stack Monitoring Kit with NOx apparatus	01 no.	2,000

**(Signature)**  
**Seal & Designation**

**LOCATION OF DELIVERY AND INSTALLATION OF INSTRUMENTS / EQUIPMENT**

<b>Sl. No.</b>	<b>Name of the Instruments / equipment</b>	<b>Quantity</b>	<b>Location for Supply, installation &amp; Commissioning</b>
1.	Global Positioning System (GPS) with accessories	02 nos.	Laboratory Central Pollution Control Board , Zonal Office (Central) , 3 <sup>rd</sup> floor, Sahkar Bhawan, North T. T. Nagar Bhopal (M.P.)
2.	Microscope with all accessories	01 no.	
3.	Bacteriological Incubator with digital temperature controller	01 no.	
4.	Deep Freezer	02 nos.	
5.	Air Conditioners- Split Type with Voltage Stabilizer	02 nos.	
6.	EPABX System with all accessories	01 no.	
7.	Aeration Compressor with all accessories	01 no.	
8.	Filtration Assembly with suction pump and accessories	01 no.	
9.	Velocity meter with all accessories	01 no.	
10.	Balance- Single (Digital) with all accessories	01 no.	
11.	COD Digestion Assembly with all accessories	01 no.	
12.	Stack Monitoring Kit with all accessories and NOx apparatus	01 no.	

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

**PRE CONTRACT INTEGRITY PACT****General**

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on \_\_\_\_\_ day of the month of \_\_\_\_\_ 2012, between, on one hand, the CPCB is an autonomous body acting through Shri....., Designation of the officer, Ministry / Department, Government of India (hereinafter called the "BUYER", which expression shall mean and include, unless the context otherwise requires his successors in office assigns) of the First Part and M/s. \_\_\_\_\_ represented by Shri\_\_\_\_\_, Chief Executive Officer (hereinafter called the "BIDDER/Seller" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the BUYER proposes to procure (name of Store/Equipment/item) and the BIDDER/seller is willing to offer/has offered the store and

WHEREAS the BIDDER is a private company / public company / Government undertaking / partnership / registered expert agency, constituted in accordance with the relevant law in the matter and the BUYER is a CPCB under the aegis of the Ministry of Environment & Forests, Government of India / performing its function as per the provisions of Water Act, 1974, Air Act, 1981 and EP Act, 1986.

NOW, THEREFORE

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence / prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to :-

Enabling the BUYER to obtain the desired said stores / equipment at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDER to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

**Commitments of the BUYER**

1.1 The BUYER undertakes that no official of the BUYER, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any advantage from the BIDDER, either for themselves or for any person, organisation or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.

1.2 The BUYER will, during the pre-contract stage, treat all BIDDERS alike, and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS

1.3 All the officials of the BUYER will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

1.4 In case any such preceding misconducted on the par of such official(s) is reported by the BIDDER to the BUYER with full and verifiable facts and the same is prima facie found to be corrected by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the BUYER the proceedings under the contract would not be stalled.

### **Commitments of BIDDERS**

2 The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of tis bid or during any pre-contract or post contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following :-

2.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantages, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organisation or third party related to the contract in exchange for nay advantage in the bidding, evaluation, contracting and implementation of the contract.

2.2 The BIDDER further undertakes that it has not giver, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER or otherwise procuring the Contract of forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favour or disfavour to any person in relation to the contract or any other contract with the Government.

2.3 \* BIDDERS shall disclose the name and address of agents and representatives and India BIDDERS shall disclose their foreign principals or associates.

2.4 \* BIDDERS shall disclose the payments to be made by them to agents / brokers or any other intermediary, in connection with this bid / contract.

2.5 \* The BIDDER further confirms and declares to the BUYERs that the BIDDER is the original manufacturer / integrator / authorised government sponsored export entity and has not engaged any individual or firm or company whether Indian of foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.

2.6 The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BUYER or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.

2.7 The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.

2.8 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

2.9 The BIDDER shall not use improperly, for purpose of competition or personal gain, or pass on to others, any information provided by the BUYER as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.

2.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

2.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

2.12 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the BUYER, or alternatively, if any relative of an officer of the BUYER has financial interested / stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filling of tender.

The term 'relative' for this purpose would be as defined in Section 6 of the Companies Act, 1956

2.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

### **3 Previous Transgression**

3.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.

3.2 The BIDDER agrees that if it makes incorrect statement on this subject BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

### **4 Earnest Money (Security Deposit)**

4.1 While submitting commercial bid, the BIDDER shall deposit an amount \_\_\_\_\_ (to be specified in RFP) as Earnest Money / Security Deposit, with the BUYER through any of the following instruments :

(i) Bank Draft or a Pay Order in favour of \_\_\_\_\_

(ii) A confirmed guarantee by an India Nationalised Bank, promising payment of the guaranteed sum to the BUYER on demand within three working days without any demur whatsoever and without seeking any reasons whatsoever. The demand for payment by the BUYER shall be treated as conclusive proof of payment.

4.2 The Earnest Money / Security Deposit (BG) shall valid upto a period mentioned in the tender document or the complete conclusion of the contractual obligations to the complete satisfaction of both the BIDDER and the BUYER, including warranty period, whichever is later.

4.3 In case of the successful BIDDER a clause would also be incorporated in the Article pertaining to Performance Bond in the Purchase Contract that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

4.4 No interest shall be payable by the BUYER to the BIDDER Earnest Money / Security Deposit for the period of its currency.

## **5 Sanction for Violations**

5.1 Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the BUYER to take all or any one of the following actions, wherever required :-

- (i) To immediately call off the pre-contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDERS would continue.
- (ii) The Earnest Money Deposit (in pre-contract stage) and / or Security Deposit / Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign any reason therefore.
- (iii) To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.
- (iv) To recover all sums already paid by the BUYER, and in case of an Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection with any other contract for any other stores, such outstanding payment could also be utilised to recover the aforesaid sum and interest.
- (v) To in case the advance bank guarantee and performance bond / warranty bond, if furnished by the BIDDER, in order to recover the payments already made by the BUYER, along with interest.
- (vi) To cancel all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation / rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.
- (vii) To debar the BIDDER from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the BUYER.
- (viii) To recover all sums paid in violation of this Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.
- (ix) In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same not be Opened.
- (x) Forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this pact.

5.2 The BUYER will be entitled to take over all or any of the actions mentioned at para 6.1 (1) to (x) of this Pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal Code, 1860 or prevention of corruption Act, 1988 or any other statute enacted for prevention of corruption.

5.3 The decision of the BUYER to the effect that a breach of the provisions of this Pact had been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Independent Monitor(s) appointed for the purposes of this Pact.

**6. Fall Clause**

6.1 The BIDDER undertakes that it has not supplied/is supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/systems or sub systems was supplied by the BIDDER to any other Ministry/Department of the Government of India or a PSU at a lower price then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the BUYER, if the contract had already been concluded.

**7. Independent Monitors**

7.1 The BUYER has appointed Independent Monitors (hereinafter referred to as Monitors) for this Pact in consultation with the Central Vigilance Commission (Name and Addresses of the Monitors to be given).

7.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

7.3 The Monitors shall not be subjected to instructions by the representatives of the parties and perform their functions neutrally and independently.

7.4 Both the parties accept that the Monitors have the right to accesses all the documents relating to the project/procurement, including minutes of the meetings.

7.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will inform the Authority designated by the BUYER.

7.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to subcontractors. The Monitor shall be under contractual obligation o treat the information and documents of the BIDDER/Subcontractors(s) with confidentiality.

**8.0 Facilitation of Investigation**

In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

9. The parties hereby sign this integrity pact at.....on.....

BUYER

BIDDER

Name of the officer

Chief Executive Officer

Designation

Department

Witness

Witness

1. \_\_\_\_\_

1. \_\_\_\_\_

2. \_\_\_\_\_

2. \_\_\_\_\_

\* Provisions of these clauses would need to be amended / deleted in line with the policy of the BUYER in regard to involvement of Indian agents of foreign supplier.

## **CHECK LIST FOR BIDDER**

1. Bid on original Tender form only.
2. Earnest money or necessary documentary proof for exemption of Earnest money with the Part-I of the Bid.
3. Price Bid must be Part-II of the Bid in the Form provided at Annexure –III of the tender document.
4. The Basic / Unit Price, Taxes, Packing, Forwarding, Handling and Transportation, Insurance, Installation charges etc. must be quoted clearly. Do not use vague terms like '**As actual, Approximately**' etc.
5. Do not use the terms '**As per specification**', '**As per Tender documents**'. There should be proper write-up and supported with printed leaflets / Literature / Catalogue etc. while submission of Tender Document.

**GLOBAL POSITIONING SYSTEM (GPS)**

**Technical Specifications:**

- 1) The GPS system should indicate and record the exact locations/points visited with date-wise separate folder.
- 2) The system should withstand the ambient temperature of  $-10^{\circ}\text{C}$  to  $100^{\circ}\text{C}$ . it should be made up of rubber or impact resistant plastic, water resistant seal , Nine direct access key , built in multidirectional antenna , 20 Channel receiver and 220 + 10 gms weight.
- 3) Data storage is secure digital (SD) card with 2.7 Inch diagonal (240 X 320) resolution and touch screen (LED back lid). Store and Digital Display Real Time positions in the portable device itself as well as in the Server and represent on the Indian map.
- 4) The GPS recorders should include Time, Date, Location, Speed Heading, Latitude, Longitude and Altitude.
- 5) The Digital Data be stored so that GPS receivers are able to draw Contour maps, Plot the route, Mark points of interest.
- 6) The System should have built –in flash memory and a long battery life for the storage of months of relevant information.
- 7) The System should have built –in base map of world wide Geographic Boundaries. The Map (updated) should be in built with system and could support Multiple Indian Languages preferably Hindi and \English.
- 8) The GPS System should be covered of **Three years Comprehensive Guarantee / Warrantee**.

**MICROSCOPE****RESEARCH MICROSCOPE****Technical Specifications:****Item:**

- 1. Microscope stand**
- It should have adjustment by vertical movement of the nosepiece, by means of coaxial coarse & fine adjustment kinds.
  - Stage should be fixed.
  - Roller guide stroke (from the focal point on the stage surface).
- 2. Stage :**
- Cross movement stage
- Atleast 20 cm x 20 cm minimum traversing area 5 cm x 5 cm with low positioned Coaxial control knobs; Provision for accommodation of various culture vessels & specimen holders, sadwick rafter counter, slides of various dimensions, watch glasses etc.
- 3. Illumination:**
- Light source
- It should have Halogen bulb 12 V, 50 WATT with bulb cantering device & light intensity control.
- Filter Holder
- It should have provisions for 4 flip-up filter holders green, light blue interference filter & frosted filter.
- Condenser Holder
- It should be Flip-up or swing-out type.
- 4. Observation System:**
- Light path for photomicrography, 3 setting positions, linked with focusing reticles, for observation tube, 35 mm camera & multitube mounting part.
  - Binocular tube inclined 45° inter pupillary distance adjustment from 55 mm to 75 mm, constant tube length adjustment.
  - Eyepiece 5 x & 10 x
  - Multitube light path, provision for mounting photomicrographic equipment directly as well as the multitube attachment.
  - Spare bulbs - 6 nos.
- 5. Condenser:**
- There should be working distance furret condenser light annuli for 4 x, 10 x, 20 x, 40 x, 100 x objectives, oil immersion.
- 6. Objectives:**
- Phase Contrast Objectives
- 4 x
- 10 x
- 20 x
- 40 x
- 100 x
- With cover and case complete
- 7. Additional item to be supplied:**
- Spare set of Eyepiece ---- 1 no.
  - Spare set of objectives ---- 1 no.
- 8. Guarantee / Warranty:** Comprehensive Guarantee / Warranty should be valid for three years.

**BACTERIOLOGICAL INCUBATOR****Technical Specifications:**

1. Inside chamber : 605 mm x 910 mm x 605 mm.
2. Inside Wall : Double walled made of thick anodized Aluminum /Stainless steel.
3. Outside wall : Mild steel furnished in durable white enamel paint.
4. Space between the walls : Atleast 75 mm thick and packed with pure white glass wool.
5. Viewing facility : Door should have double glass viewing window of size adequate enough to permit observations without disturbing the thermal conditions.
6. Heating elements : It should be located at appropriate locations to enable temperature controls through a built-in air circulating fan and thermostat arrangement from room temperature to 70°C.
7. Sensitivity Range :  $\pm 0.2^{\circ}\text{C}$  in the entire temperature range.
8. Temperature Indication : Built-in digital thermometer with adequate indication.
9. Air Ventilators : Two adjustable air ventilators located near the top of the sides.
10. No. Of Shelves : Atleast three perforated shelves adjustable at any levels,
11. Power Supply :  $230 \pm 10$  volts, 50 Hz AC power.
12. Guarantee / Warrantee : Comprehensive Guarantee / Warranty for three years.

The incubator should be complete with Pilot lamp, Digital display (continuous) facility for real time temperature, Power cable and plug, Standard Toolkit and Operating manual etc.

**DEEP FREEZER**

Deep Freezer (front loading) should be fabricated from stainless steel sheets, Aluminium and other corrosion resistant material, and finished with enamel paint. Should be provided with drain for condensate water outlet and for cleaning the storage compartment. It should be provided with door double lid, lock & key arrangement and strong wheel facility.

**Technical Specifications:**

- (1) Temperature range : 2°C to 25°C (Automatic and adjustable)
- (2) Compressor : Quiet in operation.
- (3) Capacity : 350- 400 litre.
- (4) Voltage stabilization : Should be provided with stabilizer.
- (5) Power supply : 230 ± 10 V AC, 50 Hz.
- (6) Guarantee / Warrantee : It should be Comprehensive for three years.
- (7) **BUY-BACK OFFER** : In working condition.

**Capacity: Gross Vol. : 476 / Net Vol.-464**

**Make: Blue Star, Model: HF 506**

**Sl. No: 90906718**

**Year of Purchase: 1999**

**AIR CONDITIONERS –SPLIT TYPE****Technical Specifications:**

- 1. Rating** : Atleast 4 Star for Maximum Power Saving
- 2. Capacity** : 1.5 Ton
- 3. Power Supply with automatic voltage controller** : 230 Volt  $\pm$  10%, 50 Hz, Single Phase AC
- 4. Input Power (Maximum)** : 2000 Watts or Less
- 5. Normal Cooling Capacity** : K. Cal/Hr.--5500 or BTU/Hr.--18000  
or Equivalent
- 6. Discharge/ Air Flow Volume indoor (M<sup>3</sup>/Hr.)** : Minimum 800 or Equivalent
- 7. Noise Level Indoor** : < 50 dB (A) or As per Prescribed Limit.
- 8. Compressor** : Rotary type
- 9. Accessories** : All necessary copper wire/ cable, Copper Conduit pipe for extending the connection for load based should be made available by the supplier at the time of Installation including casing & capping of cable/tube. All Acceptance / Routine test should be performed at our office.
- Guarantee / Warranty** : Comprehensive Guarantee / Warranty should be valid for three years excluding company guarantee/warrantee on compressor & other components.

**EPABX SYSTEM****Technical Specifications:**

**1. Exchange :** The System should have PCM/TCM compatibility and support to wide range of Digital, IP and Analog phones. The system should be core IP based on converged IP-TDM Architecture. The System should be support to ISDN BRI, E1, CO Lines etc. and Processor should be 16 Bit or Higher with Universal Port Architecture. The system should be 19” and have at least 32 or higher party meet me Conference Bridge. The System should be built in Firewall, LAN Switch, Direct DSL Modem Connectivity, built in Voice mail (04 Port) and expandable. It should support for IP Soft or Hard phones and upgradability without limitation.

- 2. Switching** : 100 % Non-Blocking
- 3. Network Features** : Signaling as well as full proxy mode, NAT Traversal and support for multi- vendor IP Devices.
- 4. Protocol Standard** : Control Protocol- SIP, RFC Compliance- 3261 to 3265, 4590 , 2866, 2976 etc. SDP, RTP/RTCP, Auto Inband / outband DTMF over IP and DTMF support in through SIP INFO and RFC 2833.
- 5. Security** : Protocol Level-TLS/SIP-S/SRTP; User level-Feature restriction & monitoring control; Administration Level- Call routing & Call details reporting.
- 6. Routing** : ANSI, DNIS and ASR/PDD based routing with Least Cost Routing. Routing with Time of date, Day of week & Date of the Year.
- 7. Voice Mail** : Built-in Digital Integrated voice mail 04 Ports & Expandable and Direct mail box access.
- 8. Software** : Call billing software
- 9. Maintenance** : Window based management system.
- 10. Operation Console** : PC as well as digital phone based operator console- 1 no. and No. of operator consoles can be expandable.
- 11. MDF** : Krone MDF of 100 lines capacity (expandable).
- 12. Temperature** : 0-40<sup>0</sup>C
- a) Relative Humidity** : 95 % RH on Non Condensing.
- 13. Power Supply** : 230 Volt  $\pm$  10%, 50 Hz, Single Phase AC
- 14. Power Backup** : 4-6 Hours with full capacity
- 15. System Feature** : Absent Subscriber, Access code, Automatic call back and Distribution & Call Forward/ Hold/ Pickup/ Transfer/Waiting, Flexible Numbering Plan etc.
- a) Audio& Video Conferencing Features:** Reservation based & Reservation Less conference etc.
- b) Management Provisions:** Web based management & Reporting and should be User-friendly.
- 16. Guarantee / Warranty:** Comprehensive Guarantee / Warranty should be valid for three years.

**AERATION COMPRESSOR****Technical Specifications:**

- (1) **Type** : Continuous rating, single /double stage one cylinder air cooled reciprocating oil-less or oil splash self lubricated Air Compressor driven by suitable capacity motor.
- (2) **Design** : Mono block compact or V belt driven motor design mounted on air receiver/tank
- (3) **Capacity** : Air flow of minimum 20 - 25 LPM at minimum working pressure of 7-8 Kg/cm<sup>2</sup>
- (4) **Air Tank /Receiver** : Capacity 20 - 25 Ltrs. (volume equivalent to water holding) the thickness of walls of tank & joints should be as per ISI standard for compressed containers.
- (5) **Operation** : Continuous automatic operation for desired air supply. Minimum on time operation of the compressor with the help of a pressure switch which is adjustable between 2-6 kg/cm<sup>2</sup>Noise less & vibration free working with the help of shock absorbers & ant vibration mounts
- (6) **Power Supply** : Single phase (230 ± 10) volts/50 Hz, AC operated.
- (7) **Spares & Accessories** : Complete with pre & post filters for dust and moisture, suitable starter, Automatic Pressure Switch, Belt guard, Non return valve, Condenser with automatic drain arrangement, Pressure gauge, Pressure regulator, Safety valve, Air delivery valve etc.
- (8) **Guarantee / Warranty** : Comprehensive Guarantee / Warranty should be valid for three years.

**FILTERARION ASSEMBLY (SUCTION PUMP)****Technical Specifications:****Filter Holder :**

- |                       |   |   |
|-----------------------|---|---|
| 1. Material           | : | Stainless steel lid, funnel, base, clamp and filter support of SS perforated filter mesh with 6 place Manifold. |
| 2. Filter diameter    | : | 47 mm   |
| 3. Filtration Area    | : | 12.5 cm <sup>2</sup>  |
| 4. Funnel Capacity    | : | Autoclable SS Body , 47 mm dia with 650 ml (Minimum) Capacity.  |
| 5. Suction flask Cap. | : | 1.0 / 2.0 litre   |
| 6. Connections        | : | Outer diameter of base outlet 10 mm.  |
| 7. Operating pressure | : | Vacuum only   |

**Vacuum Pump:**

- |                                 |   |   |
|---------------------------------|---|---|
| 8. Type                         | : | Single phase motor with IP 44 type of protection, with carrying handle and sturdy rubber feet.  |
| 9. Vacuum                       | : | Should be adequate for smooth filtration of water/waste water. The pump should be an oil free pump/diaphragm with continuous heavy duty type. |
| 10. Flow rate / Rating          | : | 15 LPM (Maximum) / 0.12 KW or 1 / 16 HP   |
| 11. Supply Voltage              | : | 230 ± 10 Volts, 50 Hz, Single phase AC  |
| 12. Ambient Temperature         | : | 45 °C (Maximum)   |
| 13. <b>Guarantee / Warranty</b> | : | Comprehensive Guarantee / Warranty should be valid for three years  |

The Assembly should be complete with perforated Neoprene stopper, Vacuum hose pipes, stainless steel forceps, power cord with plug and toggle switch, and operating manual with standard tool kit.

**VELOCITY METER (AIR)****Technical Specifications:**

1. Stack Temperature Range : Ambient to 900<sup>0</sup>C
2. Type of Thermocouple : Digital Pyrometer (K type)
3. Stack Velocity Range : 02 to 60 m/s
4. Thermocouple : Thermocouple sensor in SS 304 casing, Length of insertion-1.0 meter with 2.0 meter long length.
5. Manometer : Digital type with 0.0 to 1300 mm of H<sub>2</sub>O ranges with 0.01 mm least count.
6. Pitot tube : Calibrated S Type Pitot tube of SS 304 with 1.0 meter length extendable.
7. Size & Weight : It should be handy, Compact and light in weight with carrying case.
8. Spare / accessories : Instrument panel with 03 years consumables, Standard Tool Kit and operating manual. NABL calibration certificate for Temperature measurement
9. Guarantee / Warranty : Comprehensive Guarantee / Warranty should be valid for three years
10. Calibration Certification : Calibration certificate for thermocouple, Pitot tube, Manometer etc. should be provided.

**BALANCE -SINGLE PAN (DIGITAL)**

**Technical Specifications:**

1. Readability : 0.01 mg in the range of 40 to 60 gm and 0.1 mg up to at least 200 gm.
2. Weighing range : 60 gm for 0.01 mg and 200 gm for 0.1 mg.
3. Tarring Facility : Entire Range
4. Reproducibility : 0.015 mg up to 60 gm, less than 0.05 mg up to 200 gm for 0.1 mg accuracy weighing.
5. Sensitivity drift : Max.  $\pm$  1ppm /  $^{\circ}$ C
6. Display : LCD
7. Calibration adjustment : Internal, fully automatic adjustment
8. Power supply : 230  $\pm$  10 Volts, 50 Hz, Single phase AC with sufficient power Chord.
9. Other requirement : Provision to neutralize interference from electrostatic charges.
10. Optional : Standard Weight Box of E2 Class traceable to National / International Standards
11. Guarantee / Warranty : Comprehensive Guarantee / Warranty should be valid for three years

The digital balance –Single pan should be supplied with instruction/operation/Maintenance manual and proper dust cover. **Calibration Certificate** from NIST certified or Equivalent laboratory should accompany the analytical balance.

**COD DIGESTION ASSEMBLY****Technical Specification:**

1. Heating Block : Solid Metal block with 15 holes
2. Glassware : 15 Reaction Vessels (dia 40 mm approx.) & compatible Air Conditioners.
3. Temperature :  $150^{\circ}\text{C} \pm 1\%$  (Uniform heating)
4. Capacity : 15 samples at a time
5. Vessel Capacity : 200 ml (without neck) for sample size 20 ml.
6. Display : Graphic LCD Module 128 X 64 dots with large font
7. Key Board : Soft Touch membrane key board
8. Timer : Programmable with buzzer and Indicator
9. Power requirement :  $230 \pm 10\%$  Volt , 50 Hz, Single Phase AC with sufficient Power chord.
10. Consumables/Accessories : One set of condenser and vessel with cooling system. Standard Toolkit and Manual.
11. Guarantee / Warranty : Three Years Comprehensive Guarantee / Warranty.

## STACK MONITORING KIT

### Technical Specification:

Stack Sampler (Stack Monitoring Kit) on Buy-back offer.

### General

Stack Velocity Range	: 0 to 30 m/sec
Stack Temperature range	: 0 to 1000°C
Particulate sampling	: At 0 to 30 lpm
Filter Paper (Thimble)	: Collection of particulates down to 0.3 micron
Gaseous sampling	: At 0 to 3 lpm collection on a set of impingers, containing selective reagents.

### Pitot Tube

Modified S-type Pitot tube shall be fabricated from SS 304 or equivalent. The construction features should be as per USEPA method 1 to 4 & 17 or CPCB Doc. No. Emission Regulation (Dec.1985) Part III.

The system should have facilities to connect accessories like heated probe system, cyclone separator etc.

### Sampling Probe

Fabricated from SS 304 tube of suitable diameter (not less than 15 mm ID). The lengths of the Pitot tube and the sampling probes shall be of 1.5m extendable to 2 meter.

### Nozzles

A set of nozzles (minimum 4 nos.) fabricated from SS 304 or equivalent material with internal diameters suitable to cover full range of stack velocities. The leading edge of the nozzles should be sharp tapered. The minimum internal diameter of the nozzle should not be less than 4 mm.

### Thimble Holder

Filter holders fabricated from SS 304 suitable to hold cellulose / glass fiber thimbles.

### Thermocouple

Thermocouple sensor with analog or digital dial gauge capable of measuring temperature from 0 to 1000°C covered with stainless steel or mild steel casing with acid resistant treatment and appropriate length.

### Mounting Flange

A pair of male/female flanges fabricated out of mild steel with proper hole for mounting thermocouple sensor, sampling tube and Pitot tube.

## **Panel Box Sides**

Stack gas sampling module: Baked stove –enamel finish. It should have suitable arrangements or housing stop-watch, rotameter, and dry gas meter etc. for sampling purpose.

Stack gas velocity module: A separate assemble for velocity measurements and should have provision for housing of manometer and pyrometer etc.

## **Back Panel**

Hinged door panel of mild steel to contain cold box with five impingers or cold box can be provide separately for impinger kit.

## **Digital Manometer:**

Digital manometer with 0-1300 mm of H<sub>2</sub>O range. Velocity range: 0 to 30 m/sec.

## **Rotameter**

0 to 30 lpm for particulate monitoring and 0 to 3 lpm for gaseous monitoring.

## **Stop-Watch**

0 to 60 minutes, one second, readout with residual battery backup facility.

## **Calibration**

Calibration certificates for Manometer, Rotameter, Pitot tube, Nozzles, Thermocouple and DGM etc. from an accredited laboratory should be provided.

## **Impingers**

Four impingers of 120 ml and two numbers of 250 ml capacity Borosilicate glass impingers. Facility should be there for keeping ice at the bottom of impinger box.

## **Vacuum Pump**

Rotary design with a capacity up to 50 lpm gas flow with single phase motor, 220 ± 10 V AC; 50 Hz ±3%. The pump will also have a moisture trap, air inlet valve and mounted inside pump housing and should be portable.

## **Dry Gas Meter**

The sampling train shall have a dry gas meter with the facility for measuring temperature and static pressure. The capacity of the meter should be adequate to record up to 1000 lpm of airflow and a minimum readout of 0.001 cubic meters. Dry Gas meter shall be suited for gaseous sampling rates also.

## **Pump Housing**

Mild steel case with oven-baked stove-enamel finish and ON/OFF switch with indicator lights.

## **Tools**

A kit containing the essential tools required for connecting various components shall be provided with the equipment.