



Ref.No.1665/Tam/NA/2017

"A" Cover

**TAMILNADU MEDICINAL PLANT FARMS AND HERBAL MEDICINE CORPORATION LTD**  
(A GOVERNMENT OF TAMILNADU UNDERTAKING)

ARINGAR ANNA GOVT. HOSPITAL OF INDIAN MEDICINES CAMPUS,  
ARUMBAKKAM, CHENNAI – 600 106

**TENDER FORM**  
**FOR THE SUPPLY OF MACHINERIES AND EQUIPMENTS**

1. This Tender form is supplied to

Ms. \_\_\_\_\_  
\_\_\_\_\_

2. E.M.D. amount, Technical Specification etc., and company profile are furnished in one sealed cover and named as **Cover 'A'**. as per the check list.

3. Tender rates are furnished in another sealed cover and named as Cover 'B'

4. I / We .....do hereby tender to supply the equipments items of under mentioned description in the tender schedule enclosed and in accordance with the conditions noted and as per the stipulations, specifications etc., mentioned and have read the general terms and conditions (enclosed) of this tender and that I / we have made such examination of the Tender documents and the specifications etc., and of the locations, where the material should be delivered and in regard to the material requirements and understand thoroughly and distinctly agree that I / we will not here after make any claim or demand upon the corporation based upon or arising out of any alleged misunderstanding of misconception or mistake on my / our part of the said requirements, stipulations, restrictions, specifications and conditions.

Date:

Signature of Tenderer

LAST DATE FOR RECEIPT OF COMPLETED SEALED TENDERS COVER UP TO 11.00 A.M ON 29.08.17 IN THE OFFICE OF TAMPCOL AT ARIGNAR ANNA GOVT. HOSPITAL OF INDIAN MEDICINES CAMPUS, ARUMBAKKAM, CHENNAI -106.

**Date and time of opening sealed covers at 11.45 A.M. on 29.08.17.**

**Authorized Signatory**



## **Tamil Nadu Medicinal Plant Farms & Herbal Medicine Corporation Ltd.**

(A GOVERNMENT OF TAMIL NADU UNDERTAKING)

*Regd. Office :* Anna Hospital Campus, Arumbakkam, Chennai-600 106.

Company Identification No.U93090TN1983SGC010336.

Telephone: 044-26216696, Telefax: 26221484,

Website: [www.tampcol.in](http://www.tampcol.in) Email id: [tampcolho@gmail.com](mailto:tampcolho@gmail.com)

### **TENDER NOTICE NO.1665/TAM/NA/2017**

Notice is hereby given that sealed tenders in Two Cover System are invited by the Chairman and Managing Director, Tampcol, for the supply of Machineries and Equipments to Research and Development wing attached to Indian Medicine and Homoeopathy Department, Chennai-600 106. Tender documents can be obtained from the undersigned with an application on payment of Rs.1,125/- (Rupees One thousand one hundred and twenty five only) inclusive of all taxes, by means of Demand Draft drawn in favour of "Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Ltd, Chennai 600 106" payable at Chennai, on all working days from 02.08.2017 to 28.08.2017 Up to 5.00 P.M. either by post or in person (Rs.500/- extra by post). Tender document may also be downloaded from Tampcol Website: [www.tampcol.in](http://www.tampcol.in) free of cost. Tenders will be received by post, courier or in person by depositing in Tender Box at Tampcol office of the above address up to 11.00 A.M. on 29.08.2017 and will be opened on the same day at 11.45 A.M., at the same office.

**Chairman & Managing Director**

#### **Note:**

All Corrigenda, addenda, amendments, time Extension, clarification etc.

to the tender will be hosted in the above website only and not in newspaper.



**TAMILNADU MEDICINAL PLANT FARMS AND HERBAL MEDICINE  
CORPORATION LTD(A GOVERNMENT OF TAMILNADU UNDERTAKING)**

**Company's Identification No. U93090TN1983SGC010336**

**Regd. Office: Anna Hospital Campus, Arumbakkam, Chennai - 600 106, TAMILNADU**

**Phone : 044 - 2621 6696**

**Grams : TAMPCOL**

**Fax : 044 - 26221484**

**Website : [www.tampcol.in](http://www.tampcol.in)**

**E-mail : [tampcolho@gmail.com](mailto:tampcolho@gmail.com)**

**BID REFERENCE: 1665/TAM/NA/2017**

**TENDER FOR THE PURCHASE AND SUPPLY OF MACHINERIES AND EQUIPMENTS TO  
RESEARCH AND DEVELOPMENT WING ATTACHED TO INDIAN MEDICINE AND  
HOMOEOPATHY DEPARTMENT, Chennai-600 106.**

**LAST DATE OF RECEIPT OF TENDER: 29. 08.2017 AT 11.00 AM**

**NOT TRANSFERABLE**



**TAMILNADU MEDICINAL PLANT FARMS AND HERBAL MEDICINE  
CORPORATION LTD,  
ANNA HOSPITAL CAMPUS, ARUMBAKKAM, CHENNAI -600106, TAMIL NADU.**

Phone : 044-2621 6696  
Grams : TAMPCOL  
Fax : 044-26221484  
Website : www.tampcol.in  
E-mail : tampcolho@gmail.com

**BID REFERENCE: 1665/TAM/NA/2017**

TENDER FOR THE PURCHASE AND SUPPLY OF MACHINERIES AND EQUIPMENTS TO RESEARCH AND DEVELOPMENT WING ATTACHED TO INDIAN MEDICINE AND HOMOEOPATHY DEPARTMENT, Chennai - 600 106.

DATE OF COMMENCEMENT  
OF SALE OF BIDDING DOCUMENT : **02.08.2017**

LAST DATE FOR SALE OF BIDDING  
DOCUMENT : **28.08.2017**

LAST DATE AND TIME FOR  
RECEIPT OF BIDS : **29.08.2017 11.00 AM**

DATE AND TIME OF OPENING  
OF BIDS : **29 .08.2017 11.45 A.M.**

PLACE OF OPENING OF BIDS : Tamil Nadu Medicinal Plant Farms  
and Herbal Medicine Corporation Ltd,  
Anna Hospital Campus, Arumbakkam,  
Chennai- 600 106, Tamil Nadu.

**ADDRESS FOR COMMUNICATION** : Tamil Nadu Medicinal Plant Farms  
and Herbal Medicine Corporation Ltd,  
Anna Hospital Campus, Arumbakkam,  
Chennai- 600 106, Tamil Nadu.

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**SECTION I: INVITATION FOR BIDS (IFB)**

## **SECTION I: INVITATION FOR BIDS (IFB)**

**Sealed Tenders in two cover system** will be received till **11.00 AM on 29.08.2017** by The Chairman and Managing Director, Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Ltd, Anna Hospital Campus, Arumbakkam, Chennai- 600 106, for the purchase and supply of Machineries and Equipments to Research and Development wing attached to Indian Medicine and Homoeopathy Department, Chennai-600 106.

1. Interested eligible Bidders may obtain further information from the office of the Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Ltd, Anna Hospital Campus, Arumbakkam, Chennai- 600 106.

2. A complete set of bidding documents may be purchased by any interested eligible bidder on submission of a written application to the above office and upon payment of a non-refundable fee as indicated below in the form of a Demand Draft in favour of Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Ltd., payable at Chennai.

3. The bidding document may be obtained from the office of Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Ltd, Chennai - 600 106, during office hours from 10.00 AM to 5.00 PM on all working days either in person or by post.

a). Price of bidding document : Rs. 1125 /-  
(Non-refundable) (Inclusive of all taxes)

**(Alternatively, the document can also be downloaded at free of cost from TAMPCOL website [www.tampcol.in](http://www.tampcol.in))**

b). Postal charges, inland : Rs.500/- (extra)

c). Date of commencement of  
Sale of bidding document : 02.08.2017

d). Pre-bid meeting : 11.08.2017 **at 11.00 AM.**

e). Last date for sale of Bidding Document : 28.08.2017

f). Last date and time for Receipt of bids : 29.08.2017 **@ 11.00 AM.**

g). Date and time of Opening of bids : 29.08.2017 **@ 11.45 AM.**

h). Place of opening of bids : Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Ltd,  
Anna Hospital campus, Arumbakkam,  
Chennai- 600 106, Tamil Nadu.

i). Address for communication : Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Ltd,  
Anna Hospital Campus, Arumbakkam,  
Chennai-600 106, Tamil Nadu.

j) Company's Identification No. : U93090TN1983SGC010336

4. The bidders shall be solely responsible for checking these websites for any addendum/amendment issued subsequently to the bid document and take into consideration the same while preparing and submitting the bids.

5. All bids must be accompanied by a bid security as specified in the bid document and must be delivered to the above office at the date and time indicated above.

6. Bids will be opened in the presence of Bidders' representative who chooses to attend on the specified date and time.



**SECTION II: INSTRUCTION TO BIDDERS**

## SECTION II: INSTRUCTIONS TO BIDDERS

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## **A. INTRODUCTION**

### **1. Eligible Bidders**

- 1.1. Manufacturers or their authorized representatives / direct importers are eligible to participate in this tender.
- 1.2. Bidders should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by Purchaser to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under this Invitation of Bids.
- 1.3. Government-owned enterprises may participate only if they are legally and financially autonomous if they operate under commercial law, and if they are not a dependent agency of the Purchaser.

### **2. Cost of Bidding**

- 2.1. The Bidder shall bear all costs associated with the preparation and submission of its bid and Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Ltd, hereinafter referred to as "the Purchaser", will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

## **B. THE BIDDING DOCUMENTS**

### **3. Contents of Bidding Documents**

- 3.1. The goods required, bidding procedures and contract terms are prescribed in the Bidding documents. In addition to the Invitation for Bids, the Bidding Documents Include:
  - a. Instruction to Bidders (ITB);
  - b. General Conditions of Contract (GCC)
  - c. Special Conditions of Contract (SCC)
  - d. Schedule of Requirements;
  - e. Technical Specifications / Qualification criteria;
  - f. Bid Form and Price Schedules;
  - g. Bid Security form
  - h. Contract Form;
  - i. Performance Security Form;
  - j. Performance statement and
  - k. Manufacturer's Authorisations Form
- 3.2. The Bidder is expected to examine all instructions, forms, terms and specifications in the bidding documents. Failure to furnish all information required by the bidding

documents or submission of a bid not substantially responsive to the bidding documents, in every respect will be at the Bidder's risk and may result in rejection of its bid.

#### **4. Clarification of Bidding Documents**

4.1. A prospective Bidder requiring any clarification of the Bidding Documents may notify the Purchaser in writing or by Fax or e-MAIL at the Purchaser's mailing address indicated in the Invitation for Bids. The Purchaser will respond in writing to any request for clarification the Bidding Documents which it receives not later than 7 days prior to the deadline for submission of bids prescribed by the Purchaser. Written copies of the Purchaser's response (Including an explanation of the query but without identifying the source of inquiry) will be sent to all prospective Bidders which have received the bidding documents.

4.2. Pre-bid meeting.

a). The bidder or his official representative is invited to attend a **pre-bid meeting** which will take Place at the office of Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Ltd, Anna Hospital Campus, Arumbakkam, Chennai- 600 106, Tamil Nadu on 11.08.2017 at 11.00 A.M.

b). The purpose of the meeting will be to clarify issues and answer questions on any matter that may be raised at that meeting

c). The Bidder is requested to submit any questions in writing or by cable to reach the Purchaser not later than 3 days before the meeting.

d). Minutes of the meeting, including the text of the questions raised (without identifying the Source of enquiry) and the responses given will be transmitted without delay to all purchasers of the bidding documents.

e). Non-attendance at the pre-bid meeting will not be a cause for disqualification of a bidder.

#### **5. Amendment of Bidding Documents:**

5.1. At any time prior to the deadline for submission of bids, the Purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the Bidding Documents by an amendment.

5.2. All prospective bidders are to check the official website of Tampcol for any additional amendment issued subsequently to the bid document which will be binding on them.

5.3. In order to allow prospective bidders reasonable time in which to take the Amendment into account in preparing their bid, the Purchaser may, at his discretion, extend the deadline for the submission of bids.

## **C. PREPARATION OF BIDS**

### **6. Language of Bid**

- 6.1. The Bid prepared by the bidder and all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser, shall be written in the English language. Supporting documents and printed literature furnished by the Bidder may be written in another language provided they are accompanied by an accurate translation of the relevant passages in the English language in which case, for purposes of interpretation of the Bid, the English translation shall govern.

### **7. Documents Comprising the Bid:**

- 7.1. The bid prepared by the Bidder shall comprise the following components:
- (a). a Bid Form and Price Schedule completed in accordance with ITB Clauses 8, 9 and 10;
  - (b). documentary evidence established in accordance with ITB Clause 11 that the Bidder is Eligible to bid and is qualified to perform the contract if its bid is accepted;
  - (c). documentary evidence established in accordance with ITB Clause 12 that the goods and ancillary services to be supplied by the Bidder shall conform to the Bidding Documents;
  - (d). Bid Security furnished in accordance with ITB Clause 13.

### **8. Bid Form**

- 8.1. Bidder shall complete the Bid Form and the appropriate Price Schedule furnished in bidding documents, indicating for the goods to be supplied, a brief description of the goods, their country of origin, quantity and prices.

### **9. Bid Prices**

- 9.1. The Bidder shall indicate on the Price Schedule the unit prices and total Bid prices of the goods it proposes to supply under the Contract.
- 9.2. Prices indicated on the Price Schedule shall be entered separately in the following manner:
- (i). The price of the goods, quoted ex-factory, ex-show-room, ex-warehouse, or off-the-shelf, or delivered as applicable, including all duties and sales and other taxes already paid or payable:
    - (a) On components and raw material use in the manufacture or assembly of the goods quoted ex-factory; or

(b) On the previously imported goods of foreign origin quoted ex-showroom, ex-Warehouse or off-the-shelf.

- (ii) Any purchaser-country sales and other taxes which will be payable on the goods if this Contract is awarded;
- (iii) Charges for inland transportation, insurance and other local costs incidental to delivery of the goods to their final destination; and
- (iv) The cost of incidental services listed in Clause 7 of the Special Conditions of Contract.

9.3. The Bidders separation of the price components in accordance with ITB Clause above will be solely for the purpose of facilitating the comparison of bids by the Purchaser and will not in any way limit the Purchaser's right to contract on any of the terms offered.

#### **9.4 Fixed price:**

Prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and not subject to variation on any account. A bid submitted with an adjustable price quotation will be treated as non-responsive and rejected, pursuant to ITB Clause 22.

9.5. The Purchaser will arrange to get the Customs Duty on the Supplies to be made, be exempted from Government Authorities and certificate to the effect will be provided to the bidder on award of contract. Hence bidder should indicate separately the Customs Duty payable on the goods to be supplied by the Bidder. The bidder shall indicate the value of imported items on which the customs duty is payable. Any other duties / levies should be borne by the Bidder / Supplier.

### **10. Bid Currencies**

10.1. Prices shall be quoted in Indian Rupees only.

### **11. Documents establishing bidder's eligibility and qualifications**

11.1. Pursuant to ITB Clause 7, the bidder shall furnish, as part of its bid, documents establishing the bidder's eligibility to bid and its qualifications to perform the Contract if its bid is accepted.

11.2 The documentary evidence of the Bidder's qualifications to perform the Contract if its bid is accepted, shall establish to the Purchaser's satisfactions.

(a). that, in the case of a Bidder offering to supply goods under the contract which the Bidder did not manufacture or otherwise produce, the Bidder has been duly authorized (as per authorization form in Section XIII) by the goods manufacturer or produce to supply the goods in India.

(b). That the bidder has the financial, technical and production capability necessary to perform the Contract and meets the criteria outlined in the qualification requirements specified in Section VIII. To this end, all bids submitted shall include the following information:

- (i). The legal status, place of registration and principle place of business of the company or firm or partnership, etc;
- (ii). Details of experience and past performance of the bidder on Equipments offered and on those of similar nature within the past five years and details of current contracts in hand and other commitments (suggested Performance given in Section XII).

## 12. Documents establishing goods conformity to bidding documents.

12.1. Pursuant to ITB Clause 7, the Bidder shall furnish, as part of its bid, documents establishing the conformity to the bidding documents of all goods and services which the Bidder proposes to supply under the contract.

12.2. The documentary evidence of conformity of the goods and services to the Bidding documents may be in the form of literature, drawings and data and shall consist of:

- (a). A detailed description of the essential technical and performance Characteristics of the goods;
- (b). A list giving full particulars, including available sources and current prices, of all spare parts, special tools, etc., necessary for the proper and continued functioning of the Machineries and Equipments **for a period of five years** Commencement following of the Machineries and Equipments used by the Purchaser; and
- (c). A item-by-item commentary on the Purchaser's Technical Specifications demonstrating substantial responsiveness of the goods and services to those specifications or a statement of deviations and exceptions to the provisions of the Technical Specifications.

12.3. For the purpose of the commentary to be furnished pursuant to ITB Clause 12.2 (c) above, the Bidder shall note that standards for workmanship, material and equipments and references to brand names or catalogue numbers designated by the Purchaser in its Technical Specifications are intended to be descriptive only and not restrictive. The



Bidder may substitute alternative standards, brand names and/or catalogue numbers in its bid, provided that it demonstrates to the Purchaser's satisfaction that the substitutes are substantially equivalent or superior to those designated in the Technical Specifications.

### **13. Bid Security**

- 13.1. Pursuant to ITB Clause 7, the Bidder shall furnish, as part of its bid, bid security for the amount as indicated in Section V, schedule of requirements.
- 13.2. The bid security is required to protect the Purchaser against risk of Bidders Conduct which would warrant the security's forfeiture, pursuant to ITB Clause 13.7.
- 13.3. The bid security shall be in Indian Rupees and shall be in any one of the following forms:
- (a) Banker's cheque, (or)
  - (b) Demand Draft  
Obtained from any scheduled bank in favour of Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Ltd, payable at Chennai.
- 13.4. Any bid not secured in accordance with ITB Clauses 13.1 and 13.3 above will be rejected by the Purchaser as non-responsive, pursuant to ITB Clause 22.
- 13.5. Unsuccessful bidders bid security will be discharged/returned as promptly as Possible but not later than 30 days after the expiration of the period of bid Validity prescribed by the Purchaser, pursuant to ITB Clause 14.
- 13.6. The successful bidder's bid security will be discharged upon the bidders signing the contract, pursuant to ITB Clause 30, and furnishing the security, pursuant to ITB Clause 31.
- 13.7. The bid security may be forfeited:
- (a). If a bidder withdraws its bid.
  - (b). In case of a successful bidder, if the bidder fails:
    - (i). To sign the contract in accordance with ITB Clause 30; or
    - (ii). To furnish performance security in accordance with ITB Clause 31.

### **14. Period of Validity of Bids**

- 14.1 Bids shall remain valid for 90 days after the date of bid opening prescribed by the Purchaser, pursuant to ITB Clause 17. A bid valid for a shorter period may be rejected by the Purchaser as non-responsive.

- 14.2 In exceptional circumstances, the Purchaser may solicit the bidders consent to an extension of the period of validity. The request and the responses thereto shall be made in writing (or by cable or telex). The bid security provided under ITB Clause 13 shall be suitably extended. A bidder may refuse the request without forfeiting its bid security. A bidder granting the request is not required or permitted to modify its bid.

## **15. Format and Signing of Bid**

- 15.1. The bidder shall prepare the bid technical bid (Cover A) and the price bid (Cover B) and placed in separately sealed covers clearly marking "Technical bid" and "Price bid" as appropriate.
- 15.2. All copies of the bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract. The letter of authorization shall be indicated by written power of-attorney accompanying the bid. All pages of the bid, except for un amended printed literature, shall be initialed by the person or persons signing the bid.
- 15.3. Any interlineations, erasures or overwriting shall be valid only if they are initialed by the person or persons signing the bid.

### **D. SUBMISSION OF BIDS**

## **16. Sealing and Marking of Bids**

- 16.1. The bidder shall seal the "Technical bid" and "Price bid" in separate inner envelopes only making the envelopes as "Technical bid" and "Price bid". He shall then place these two inner envelopes in an outer envelope.
- 16.2. The inner envelopes and outer envelopes and the cover shall be:
- (a). addressed to the Purchaser at the following address:

**Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Ltd., Anna Hospital Campus, Arumbakkam, Chennai- 600 106, Tamil Nadu**

- (b). Bear the project name, the invitation for bids (IFB) number and the words **"Do not open before 11.45 A.M. on " 29.08.2017"**
- 16.3. The inner envelopes shall indicate the name and address of the bidder to enable the bid to be returned unopened in case it is declared "late".
- 16.4. If the cover containing the outer envelope is not sealed and marked as required by ITB Clause 16.2, the Purchaser will assume no responsibility for the bid's misplacement or premature opening.

16.5. e - Mail or facsimile bids will be rejected.

#### **17. Deadline for Submission of Bids:**

17.1. Bids must be received by the Purchaser at the address specified under ITB Clause 16.2 not later than the time and date specified in the Invitation for Bids (Section I). In the event of the specified date for the submission of bids being declared a holiday for the Purchaser, the bids will be received up to the appointed time on the next working day.

17.2. The Purchaser may, at its discretion, extend this deadline for submission of bids by ending the bid documents in accordance with ITB Clause 5, in which case all rights and obligations of the purchasers and bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

#### **18. Late Bids**

18.1. Any bid received by the Purchaser after the deadline for submission of bids prescribed by the Purchaser, pursuant to ITB Clause 17, will be rejected and/or returned unopened to the Bidder.

#### **19. Modification and Withdrawal of Bids**

19.1. No Tenderer is allowed to withdraw the tender after submitting the tender.

19.2. Withdrawal of a bid will result in the bidder's forfeiture of its bid security, pursuant to Clause 13.7.

19.3. The bidder may modify its bid after the bids submission, provided that written notice of the modification is received by the Purchaser prior to the deadline prescribed for submission of bids. Provided that where more than one tender is submitted by the same tenderer, the lowest eligible financial bid shall be considered for evaluation.

19.4. The bidder's modification notice shall be prepared, sealed, marked and dispatched in accordance with the provisions of ITB Clause 16

19.5. No bid may be modified subsequent to the deadline for submission of bids.

### **E. BID OPENING AND EVALUATION**

#### **20. Opening of Bids by Purchaser**

20.1. The Purchaser will open only the Technical bids (Cover A) of all bids, in the presence of bidder's representatives who choose to attend, at **11.45 AM On 29.08.2017** at the following location:

**Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Ltd., Anna Hospital Campus, Arumbakkam, Chennai- 600 106, Tamil Nadu.**

The bidder's representatives who are present shall sign a register evidencing their attendance. In the event of the specified date of bid opening being declared a holiday for the Purchaser, the bids shall be opened at the appointed time and location on the next working day.

- 20.2. The bidder's names, modifications, bid withdrawals and the presence or absence of the requisite bid security and such other details as the Purchaser, at its discretion, may consider appropriate will be announced at the opening. No bid shall be rejected at bid opening, except for late bids, which shall be returned unopened to the bidder pursuant to ITB Clause 18.
- 20.3. The Purchaser will prepare minutes of the bid opening.
- 20.4 The "Price Bid" (Cover B) will be opened after evaluation of "Technical bids" (Cover A) and the date and time will be intimated to bidders whose bids are responsive and who are selected by the Purchaser.

## **21. Clarification of Bids**

- 21.1. During evaluation of bids, the Purchaser may, at its discretion, ask the bidder for clarification of its bid. The request for clarification and the response shall be in writing. Unless the purchaser asks for change in price due to the clarifications sought the bidder is not permitted to alter the price furnished in the "Price bid" "Cover B". The change in price shall be submitted in a separately sealed covers with marking in the cover "supplemental price bid" before opening of the "original price bid".

## **22. Preliminary Examination**

- 22.1. The Purchaser will examine the bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally in order. Bids from Representatives, without proper authorization from the manufacturer as per Section XIII, shall be treated as non-responsive.
- 22.2. Arithmetical errors will be rectified on the following basis. **If there is discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If the supplier does not accept the correction of errors, its bid will be rejected. If there is a discrepancy between the prices quoted in words and in figures, lower of the two shall be considered.**
- 22.3. The Purchaser may waive any minor informality or non-conformity or irregularity in a bid which does not constitute a material deviation, provided such a waiver does not prejudice or affect the relative ranking of any bidder.

- 22.4. Prior to the detailed evaluation, pursuant to Clause ITB 23, the Purchaser will determine the substantial responsiveness of each bid to the bidding documents. For purposes of these clauses a substantially responsive bid is one which conforms to all the terms and conditions of the bidding documents without material deviations. Deviations from or objections or reservations to critical provisions such as those concerning Performance Security (GCC Clause 6). Warranty (GCC Clause 14), Force Majeure (GCC Clause 26), Applicable law (GCC Clause 29) and Taxes and Duties (GCC Clause 31) will be deemed to be material deviation. The purchaser's determination of bid responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.
- 22.5. A bid determined as not substantially responsive will be rejected by the Purchaser and may not subsequently be made responsive by the bidder by correction of non-conformity.

### 23. Evaluation and Comparison of Bids

- 23.1. The Purchaser will evaluate and compare bids previously determined to be substantially responsive, pursuant to ITB Clause 22.
- 23.2. The purchaser's evaluation of a bid will take into account, in addition to the bid price (ex-factory/ex-warehouse/off-the-shelf price of the goods offered from within India, such price to include all costs as well as duties and taxes paid or payable on components and raw material incorporated or to be incorporated in the goods, and excise duty on the finished goods, if payable) and price of incidental services, the following factors, in the manner and to the extent indicated in ITB Clause 23.3 and in the technical specifications:
- a.)
- i). Cost of inland transportation, insurance and other costs within India incidental to the delivery of goods to their final destination; for price evaluation, the rate without sales tax quoted by domestic bidders will be compared with the rate with tax quoted by bidders outside Tamil Nadu as per Tenders Act.
- ii). **The Guarantee period should be for a minimum period of 5 years.**
- (b). delivery schedule offered in the bid;
- (i). Manufacturer Bidders:-
- aa) An undertaking for the uninterrupted supply of adequate spares at least for a period of 10 years shall be furnished.

bb) Availability/ establishment of after sales service facility at Chennai, Tamil Nadu to ensure uninterrupted after sales service during warranty and Maintenance period shall be confirmed. The details of service facility available / proposed to be set up shall be furnished in their bid.

ii). Non-Manufacturer Bidder:-

- The bidder shall furnish an undertaking for the uninterrupted supply of adequate spares for at least a period of 10 years with the backup undertaking from their manufacturer.
- Availability / Establishment of after sales service facility at Chennai, Tamil Nadu to ensure uninterrupted after sales service during warranty and maintenance period shall be confirmed. The details of service facility available / proposed to be set up shall be furnished in their bid.

23.3. Pursuant to ITB Clause 23.2 the following evaluation methods will be applied:

- (a). Inland transportation, ex-factory/ from port-of-entry, insurance and incidentals.
- (i). Inland transportation, insurance and other incidentals, for delivery of goods to the project site as stated in ITB Clause 9.2.
- (ii). The Purchaser's responsibility is only to provide the site and electrical power at one Point near the site. All other works including the civil foundation for the equipment is the responsibility of the supplier.
- (iii). The above costs will also be added to the bid price.

(b). Delivery schedule:

No Deviation in delivery schedule is permissible. Bids received with deviation in delivery schedule will be treated as non-responsive.

(c). Deviation in Payment Schedule:

No Deviation in payment schedule is permissible. Bids received with deviation in payment schedule will be treated as non-responsive.

(d). Spare parts and after sales service facilities in India:

The cost of the Purchaser of establishing the minimum service facilities and parts inventories, as outlined elsewhere in the bid invitation, if quoted separately, shall be added to the bid price.

(e). Any major repair pointed out by the Purchaser shall be rectified by the supplier from the date of intimation within a period of 3 calendar days and commission the equipment to the satisfaction of the Purchaser.

## **24. Contacting the purchaser**

- 24.1. Subject to ITB Clause 21, no bidder shall contact the Purchaser on any matter relating to its bid, from the time of bid opening to the time the contract is awarded.
- 24.2. Any effort by a bidder to influence the Purchaser in the Purchaser's bid evaluation, bid comparison or contract award decisions may result in rejection of the bidders bid.
- 24.3. The bidders shall not make attempts to establish unsolicited and unauthorized contact with the Tender Accepting Authority, Tender Inviting Authority or Tender Scrutiny Committee after opening of the bids and prior to the notification of award and any attempt by any bidder to bring to bear extraneous pressures on the under Accepting Authority bidder shall be sufficient reason to disqualify the bidder.
- 24.4. Notwithstanding anything contained in clause 24.3 above pursuant to ITB clause 21, the tender Inviting Authority or the Tender Accepting Authority, may seek bona fide Clarifications from bidders relating to the bids submitted by them during the evaluation of bids.

## **F. AWARD OF CONTRACT**

### **25. Deleted**

### **26. Award Criteria**

- 26.1. Subject to ITB Clause 28, the Purchaser will award the contract to the successful bidder whose bid has been determined to be substantially responsive and has been determined as the lowest evaluated bid, provided further that the bidder is determined to be qualified to perform the contract satisfactorily.

### **27. Purchaser's right to vary quantities at time of award**

- 27.1. **The Purchaser reserves the right at the time of award of contract to increase or decrease the quantity of goods and services originally specified in the schedule of requirements without any change in unit price or other terms and conditions.**

### **28. Purchaser's right to accept any bid and to reject any or all bids**

- 28.1. The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of contract, without thereby

incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for the purchaser's action.

## **29. Notification of Award**

29.1 Prior to the expiration of the period of bid validity, the Purchaser will notify the Successful bidder in writing by registered letter or by cable or telex, to be confirmed, that its bid had been accepted.

29.2. The notification of award will constitute the formation of the contract.

29.3. Upon the successful bidders furnishing of performance security pursuant to ITB Clause 31, the Purchaser will promptly notify each unsuccessful bidder and will discharge its bid security, pursuant to ITB Clause 13.

## **30. Signing of Contract**

30.1. At the same time as the Purchaser notifies the successful bidder that its bid has been accepted, the Purchaser will send the bidder the contract form provided in the bidding documents, incorporating all agreements between the parties.

30.2. Within 15 days of receipt of notification of award, the successful bidder shall sign and date the contract and return it to the Purchaser.

## **31. Performance Security**

31.1. Within 15 days of the receipt of notification of award from the Purchaser, the successful bidder shall furnish the performance security in accordance with the Special Conditions of Contract, in the performance security form provided in the bidding documents or in another form acceptable to the Purchaser.

31.2. Failure of the successful bidder to comply with the requirement of ITB Clause 30 or ITB Clause 31 shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security, in which event the Purchaser may make the award to the next lowest evaluated bidder or call for new bids.

## **32. Fraud and corruption**

It is purchaser's policy to require that the bidders, suppliers and contractors and their subcontractor observe the highest standard of ethics during the procurement and execution of such contracts.

1. in pursuance of this policy, the purchasers;

(a). defines, for the purposes of this provision, the terms set forth below as follows:

(i). "corrupt practice"



Is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

**(ii). “fraudulent practice”**

Is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to as defined in Clause 32.1.

In this context, any action taken by a bidder, supplier, contractor, or a sub-contractor to influence the procurement process or contract execution for undue advantage is improper.

2. “Another party” refers to a public official acting in relation to the procurement process or contract execution.

In this context, “public official” includes staff and employees of other organizations taking or reviewing procurement decisions.

3. a “party” refers to a public official; the terms “benefit” and “obligation” relate to the procurement process or contract execution; and the “act or omission” is intended to influence the procurement process or contract execution. Mislead, a party to obtain a financial or other benefit or to avoid an obligation;

**(iii). “collusive practice”**

4. Is an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party;

**(iv). “coercive practice”**

5. Is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

**(v). “obstructive practice” is**

- (a). Deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation;
- (or)

- (b). Acts intended to materially impede the exercise of the purchaser’s inspection and audit rights provided for under sub-clause 32 (e) below.

- (b). will reject a proposal for award if it determines that the bidder considered for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for the contract in question;
- (c). will cancel the contract if the purchaser determines at any time that the bidder, supplier and contractors and their sub contractors engaged in corrupt, fraudulent, collusive, or coercive practices.
- (d). will sanction a firm or individual, including declaring ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for, or in executing, a contract; and
- (e). will have the right to inspect the accounts and records of the bidders, supplier, and contractors and their subcontractors and to have them audited by auditors appointed by the purchaser.

Furthermore, Bidders shall be aware of the provision stated in Sub Clause 32 of the General Conditions of Contract.

### **33. Appeal**

- a). "parties" refers to participants in the procurement process (including public officials) attempting to establish bid prices at artificial, non competitive levels.
- b). a "party" refers to a participant in the procurement process or contract execution.

33.1 This tender is governed by the provisions of Tamil Nadu Transparency in Tenders Act 1998 and the Rules there under.

33.2 Any tenderer aggrieved by the order passed by the Tender Accepting Authority under section 10 of the said Act, may appeal to the Government within ten days from the date of receipt of order and the Government shall dispose the appeal within fifteen days from the date of receipt.

33.3 No Appeal shall be preferred while the tender is in process until tender is finalized and Notification of award as stated ITB in clause 29 is completed by the purchaser.

**SECTION III: GENERAL CONDITIONS OF CONTRACT**

**SECTION III: GENERAL CONDITIONS OF CONTRACT****TABLE OF CLAUSES**

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## GENERAL CONDITIONS OF CONTRACT

### 1. Definitions

1.1. In this contract the following terms shall be interpreted as indicated:

- (a). "The Contract" means the agreement entered into between the Purchaser and the Supplier as recorded in the Contract Form signed by the parties, including all the attachments and appendices thereto and all documents incorporated by reference therein;
- (b). "The Contract Price" means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligations;
- (c). "The Goods" means all the equipment, machinery, and/or other materials which the Supplier is required to supply to the Purchaser under the Contract;
- (d). "Services" means services ancillary to the supply of the Goods, such as transportation and insurance, and other incidental services, such as installation, commissioning, provision of technical assistance, training and other obligations of the Supplier covered under the contract;
- (e). "GCC" means the General Conditions of Contract contained in this section.
- (f). "SCC" means the Special Conditions of Contract.
- (g). "The Purchaser" means the Organisation purchasing the Goods, as named in SCC;
- (h). "The Supplier" means the individual or firm supplying the Goods under this Contract;
- (i). "The Project Site", where applicable means the place or places named in SCC.
- (j). "Day" means calendar day.
- (k). "Delivery period" means the period applicable up to completion of supply, installation, testing and commissioning of the equipment by the supplier at the Project site and accepted by the Purchaser.

### 2. Application

2.1. These General Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

### 3. Standards

3.1. The Goods supplied under this Contract shall conform to the standards mentioned in the technical Specifications, and, when no applicable standard is mentioned, to the authoritative standard appropriate to the Goods country or origin and such standards shall be the latest issued by the concerned institution.

#### **4. Use of Contract Documents and Information**

- 4.1 The Supplier shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only as far as may be necessary for purposes of such performance.
- 4.2. The Supplier shall not, without the Purchaser's prior written consent, make use of any document or information enumerated in GCC Clause 4.1 except for purposes of performing the Contract.
- 4.3. Any document, other than the Contract itself, enumerated in GCC clause 4.1 shall remain the property of the Purchaser and shall be returned (in all copies) to the Purchaser on completion of the supplier's performance under the Contract if so required by the Purchaser.

#### **5. Patent Rights**

- 5.1 The Supplier shall indemnify the Purchaser against all third-party claims of infringement of patent, trademark or industrial design rights arising from use of the Goods or any part thereof in India.

#### **6. Performance Security**

- 6.1. Within 15 days after the Supplier's receipt of notification of award of the Contract, the Supplier shall furnish performance security to the Purchaser for the amount specified in the Special Conditions of Contract.
- 6.2. The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.
- 6.3. The Performance Security shall be denominated in India Rupees and shall be in one of the following forms:
- (a). A Bank guarantee issued by a nationalized/ scheduled bank located in India and in the form provided in the bidding Documents or any other form acceptable to the Purchaser; or
  - (b). A cashier's cheque, certified cheque, or demand draft.
- 6.4. The performance security will be discharged by the Purchaser and returned to the supplier not later than 30 days following the date of completion of the supplier's performance obligations, including any warranty obligations.

## 7. Inspection and Tests

- 7.1. The Purchaser or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract at no extra cost of the Purchaser. The Special conditions of Contract and/or the Technical Specifications shall specify what inspections and tests the Purchaser requires and where they are to be conducted. The Purchaser shall notify the Supplier in writing of the identity of any representatives retained for these purposes.
- 7.2. The inspections and test may be conducted on the premises of the Supplier or its subcontractor(s), at point of delivery and/or at the Goods final destination. Where conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance including access to drawings and production data - shall be furnished to the inspectors at no charge to the Purchaser.
- 7.3. Should any inspected or tested Goods fail to conform to the specifications, the Purchaser may reject them and the Supplier shall either replace the rejected Goods or make all alternations necessary to meet specification requirements free of cost to the Purchaser.
- 7.4. The Purchasers right to inspect, test and, where necessary, reject the Goods' arrival in at site shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods dispatched.
- 7.5. Nothing in GCC Clause 7 shall in any way release the Supplier from any warranty or other obligations under this Contract.
- 7.6. Inspection and Audit
- (i). The supplier shall permit the purchaser and or persons appointed by the purchaser to inspect the supplier's office and / or the accounts and records of the suppliers and its sub contractors relating to the performance of the contract, and to have such accounts and records audited by auditors appointed by the purchaser if required.
  - (ii). The Supplier's attention is drawn to Clause 32, which provides, inter alia, that acts intended to materially impede the exercise of the purchaser inspection and audit rights provided for under Sub-Clause 7.6 (i) constitute a prohibited practice subject to contract termination
  - (iii) **The successful tenderer / supplier have to produce a sample for verification before manufacturing our total requirement and it has to be got approved from the inspecting authorities.**
  - (iv) **The complete expenditure for travelling, boarding and lodging for the inspecting authorities to the works place has to be borne by the successful tenderer / supplier.**

## **8. Packing**

- 8.1. The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods final destination and the absence of heavy handling facilities at all points in transit.
- 8.2. The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be provided for in the Contract including additional requirements, if any, specified in SCC and in any subsequent instructions ordered by the Purchaser.

## **9. Delivery and Documents**

- 9.1. Delivery of the Goods shall be made by the Supplier in accordance with the terms specified by the Purchaser in the Notification of Award. The details of dispatching and / or other documents to be furnished by the supplier are specified in SCC.

## **10. Insurance**

- 10.1. The Goods Supplied under the Contract shall be fully insured in Indian Rupees against the loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in the Special Conditions of Contract.

## **11. Transportation**

- 11.1. Where the Supplier is required under the Contract to transport the Goods to a specified place of destination within the India defined as Project site, transport to such place of destination in India insurance, as shall be specified in the Contract, shall be arranged by the Supplier, and the related cost shall be included in the Contract Price.

## **12. Incidental Services**

- 12.1. The supplier may be required to provide any or all of the following services, including additional services, if any, specified in SCC:
- (a). Performance or supervision of the on-site assembly and/or start-up of the supplied Goods;
  - (b). furnishing of tools required for assembly and/or maintenance of the supplied Goods;
  - (c). furnishing of detailed operations and maintenance manual for each appropriate unit of supplied Goods.



- (d). performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and
- (e). training of the Purchaser's Personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance and/or repair of the supplied Goods.

The Purchaser responsibility is only providing the site and electrical power at one point near the site. All other works including the civil foundation for the equipment is the responsibility of the supplier

12.2. Prices charged by the Supplier for incidental services, if not included in the contract Price of the Goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

### **13. Spare Parts**

- 13.1. As specified in the Special Conditions of Contract, the Supplier may be required to provide any or all of the following materials and notifications and information pertaining to spare parts manufactured or distributed by the Supplier:
  - a). Such spare parts as the Purchaser may elect to purchase from the Supplier, providing that this election shall not relieve the Supplier of any warranty obligations under the Contract; and
  - (b). In the event of termination of production of the spare parts:
    - (i). advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and
    - (ii). following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if and when requested.

### **14. Warranty**

- 14.1. The Supplier warrants that the Goods supplied under this Contract are new, unused, of the most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The supplier further warrants that the Goods supplied under this Contract shall have no defect arising from design, materials or workmanship (except when the design and/or material is required by the Purchaser's specifications) or from any act or omission of the Supplier, that may develop under normal use of the supplied Goods in conditions obtaining in the country of final destination.
- 14.2. This warranty shall remain valid for five years after the Goods or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the Contract.

14.3. The Purchaser shall promptly notify the supplier in writing of any claims arising under this warranty.

14.4. Upon receipt of such notice, the Supplier shall, within the period specified in SCC and with all reasonable speed, repair or replace the defective Goods or parts thereof, without cost to the Purchaser.

14.5. If the Supplier, having been notified, fails to remedy the defect(s) within the period specified in SCC within a reasonable period, the Purchaser may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the contract.

## **15. Payment**

15.1. The method and conditions of payment to be made to the Supplier under the Contract shall be specified in the Special Conditions of Contract.

15.2. The Suppliers request(s) for payment shall be made to the Purchaser in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and the services performed, and by documents, submitted pursuant to GCC Clause 9, and upon fulfilment of other obligations stipulated in the contract.

15.3. 70% Payment shall be made after the supply and on submission of the invoice/claim by the Supplier. Balance 30 % will be released after satisfactory commissioning of the Machine by sending necessary certificate from user end to this office.

15.4. Payment shall be made in Indian Rupees only.

## **16. Prices**

16.1. Prices charged by the Supplier for Goods delivered and Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid, with the exception of any prices adjustments authorized in the special Conditions of Contract or in the Purchaser's request for bid validity extensions, as the case may be.

## **17. Change Orders**

17.1. The Purchaser may at any time by written order given to the Supplier pursuant to GCC Clause 30, make changes within the general scope of the Contract in any one or more of the following:

- (a). drawings, designs or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
- (b). the method of shipping or packing
- (c). the place of delivery; or
- (d). the services to be provided by the Supplier.

17.2. If any such changes cause an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this clause must be asserted within thirty (30) days from the date of the Supplier's receipt of the Purchaser's change order.

#### **18. Contract Amendments**

18.1. Subject to GCC Clause 17, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

#### **19. Assignment**

19.1. The Supplier shall not assign, in whole or in part, its obligations to perform under the contract, except with the Purchaser's prior written consent.

#### **20. Subcontracts**

20.1. The supplier shall notify the Purchaser in writing of all subcontracts awarded under the contract if not already specified in his bid. Such notification, in his original bid or later, shall not relieve the Supplier from any liability or obligation under the contract.

#### **21. Delays in the Supplier's Performance:**

21.1. Delivery of the Goods and performance of the Services shall be made by the Supplier in accordance with the time schedule specified by the Purchaser in its Schedule of Requirements.

21.2. If at any time during the performance of the Contract, the Supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the goods and performance of the Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier's time for performance with or without liquidated damages, in which case the extension shall be ratified by the parties by amendment of the Contract.

21.3. Except as provided under GCC Clause 24, a delay by the Supplier in the performance of its delivery obligation shall render the supplier liable to the imposition of liquidated damages pursuant to GCC Clause 22, unless any extension of time is agreed upon pursuant to GCC clause 21.2 without the application of liquidated damages.

#### **22. Liquidated Damages:**

22.1. Subject to GCC Clause 24, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in SCC of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in the SCC. Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to GCC Clause 23.

**23. Termination for Default:**

- (a). The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, terminate the Contract in whole or part;
  - (i). if the Supplier fails to deliver any or all of the goods within the time period(s) specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to clause 21; or
  - (ii). if the Supplier fails to perform any other obligation(s) under the Contract; or
  - (iii). if the supplier, in the judgment of the Purchaser, has engaged in fraud and corruption, as defined in GCC clause 32, in competing for or in executing the contract.
- (b). In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 23 (a) The Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any additional costs for such similar Goods. However, the Supplier shall continue the performance of the Contract to the extent not terminated.

**24. Termination for Insolvency**

- (a). The Purchaser may at any time terminate the Contract by giving written notice to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the Purchaser.

**25. Termination for Convenience**

- a). The Purchaser, may by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective.
- (b). The Goods that are complete and ready for shipment within 30days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect.
  - (i). to have any portion completed and delivered at the Contract terms and prices; and /or
  - (ii). to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and for materials and parts previously procured by the Supplier.

## **26. Force Majeure**

- 26.1. Notwithstanding the provisions of GCC Clauses 21, 22, 23, the Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
- 26.2. For purposes of this Clause "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.
- 26.3. If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the force majeure event. Appropriate delivery extension will be permitted by the purchaser for delay if any in execution, for reasons not attributable to the supplier and under Force Majeure conditions.

## **27. Resolution of Disputes**

- 27.1. The Purchaser and the supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.
- 27.2. If, after thirty (30) days from the commencement of such informal negotiations, the Purchaser and the Supplier have been unable to resolve amicably a Contract dispute, either party may require that the dispute be referred for resolution to the formal mechanisms specified in the Special Conditions of Contract. These mechanisms may include, but are not limited to, conciliation mediated by a third Party, adjudication in an agreed national forum, and national arbitration.

## **28. Governing Language**

- 28.1. The contract shall be written in English language. Subject to Clause 29, English language version of the Contract shall govern its interpretation. All correspondence and documents pertaining to the Contract which are exchanged by the parties shall be written in the same language.

## **29. Applicable Law**

- 29.1. The Contract shall be interpreted in accordance with the laws of the Union of India.

### 30. Notices

- 30.1. Any notice given by one party to the other pursuant to this Contract shall be sent to other party in writing or by cable, telex or facsimile and confirmed in writing to the other Party's address specified in Special Conditions of Contract.
- 31.2. A notice shall be effective when delivered or on the notice's effective date, whichever is later.

### 31. Taxes and Duties

- 31.1. Suppliers shall be entirely responsible for all taxes, duties, license fees, octopi, road permits, etc., incurred until delivery of the contracted Goods to the Purchaser. However, Sales tax in respect of the transaction between the Purchaser and the Supplier shall be payable extra, if so stipulated in the Notification of Award.

### 32. Fraud and corruption

- 32.1 If the Purchaser determines that the Supplier has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Purchaser may, after giving 7 days notice to the Supplier, terminate the Supplier's employment under the Contract and cancel the contract, and the provisions of Clause 23 shall apply as if such termination had been made under clause 23.

- (a). For the purposes of this Sub-Clause:
- (i). "corrupt practice" is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
  - (ii). "fraudulent practice" is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
  - (iii). "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
  - (iv). "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
  - (v). "obstructive practice" is
    - (a). Deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a purchaser investigation into allegations of a corrupt, fraudulent, coercive or collusive

practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or (bb) acts intended to materially impede the exercise of the purchaser's inspection and audit rights provided for under Clause 11 [Inspections and Audits by the Bank].

- 32.2. Notwithstanding the clause 32 above, Should any employee of the Supplier be determined to have engaged in or obstructive practice during the purchase of the Goods, then that employee shall be removed.

**SECTION IV: SPECIAL CONDITIONS OF CONTRACT**



**SECTION IV: SPECIAL CONDITIONS OF CONTRACT****TABLE OF CLAUSES**

(The corresponding Clause number of the General Conditions is in parentheses)

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## **SPECIAL CONDITIONS OF CONTRACT**

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of contract. The Corresponding clause number of the General Conditions is indicated in parentheses.

### **1. Definitions (GCC Clause 1)**

(a). The Purchaser is Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Ltd, Chennai.

(b). the Supplier is.....

(c). Project site is the place(s) mentioned in the Schedule of Requirements

### **2. Performance Security (GCC Clause 6)**

2.1. Substitute Clause 6.1 of GCC by the following:

Within 15 days after the supplier's receipt of Notification of Award, the supplier shall furnish performance security to the Purchaser for an amount of 5% of the contract value valid upto 60 days after the date of completion of performance obligations including the warranty obligations. The performance security amount will be retained towards performance security for the guarantee period of 5 years.

2.2. Substitute Clause 6.3 (b) of GCC by the following:

A cashier's cheque or banker's certified cheque or crossed demand draft or pay order drawn in favour of the Purchaser.

2.3. Substitute Clause 6.4 of the GCC by the following:

The Performance Security will be discharged by the Purchaser and returned to the Supplier not later than 30 days following the date of completion of the Supplier's performance obligations, including the warranty obligations, under the Contract.

2.4. Add Clause 6.5 to the GCC of the following:

In the event of any contract amendment, the supplier shall, within 15 days of receipt of such amendment, furnish the amendment to the Performance Security, rendering the same valid for the duration of the Contract, as amended for further period of 60 days thereafter.

### **3. Inspection and Tests (GCC Clause 7)**

The following inspection procedures and tests are required by the Purchaser;

**The successful tenderer / supplier have to produce a sample for verification before manufacturing our total requirement and it has to be got approved from the inspecting authorities.**

**The complete expenditure for travelling, boarding and lodging for the inspecting authorities to the works place has to be borne by the successful tenderer / supplier.**

The supplier shall get each equipment inspected in manufacturer's works and submit a test certificate and also guarantee / warranty certificate that the equipment conforms to laid down specifications.

The Purchaser or its representative shall inspect and/or test any or all the equipment to confirm their conformity to the Contract specifications, prior to despatch from the manufacturer's premises. Such inspection and clearance will not prejudice the right of the consignee to inspect and test the equipment on receipt at destination.

If the equipment fails to meet the laid down specifications the supplier shall take immediate steps to remedy the deficiency or replace the defective equipment to the satisfaction of the Purchaser.

### **4. Packing (GCC Clause 8)**

Add as Clause 8.3 of the GCC the following:

Packing Instruction: The Supplier will be required to mark separate packages for each consignee. Each package will be marked on three sides with proper paint/indelible ink, the following:

- i). Project
- ii). Contract No.
- iii). Supplier's Name
- iv). Packing list reference number

### **5. Delivery and Documents (GCC Clause 9)**

Upon delivery of the Goods, the Supplier shall notify the Purchaser and the Insurance Company by cable or Telex or fax the full details of shipment including the Contract number, railway receipt number and date, description of Goods, quantity, names of the consignee etc.

The Supplier shall mail the following documents to the Purchaser, with a copy to the Insurance Company.

- (i). Three Copies of Supplier invoice (in duplicate) showing Goods description, quantity, unit price, total amount;
- (ii). Railway receipt/acknowledgment of receipt of goods from the Consignee(s)
- (iii). Insurance Certificate;
- (iv). Manufacturer's/ Supplier's warranty and test Certificate;
- (v). Inspection Certificate issued by the nominated inspection agency, and the Supplier's factory inspection report;

The above documents shall be received by the Purchaser before arrival of Goods (except where the Goods have been delivered directly to the Consignee with all documents) and, if not received, the supplier will be responsible for any consequent expenses.

#### **6. Insurance (GCC Clause 10)**

For delivery of goods at site, the insurance shall be obtained by the Supplier in an amount equal to 110% of the value of the goods from "Warehouse to Warehouse" (Final destinations) on "All Risks" basis including War Risks and Strike, etc.

#### **7. Incidental Service (GCC Clause 12)**

The following services covered under Clause 12 shall be furnished and the cost shall be included in the contract price:

- (a). Unloading, safe storage and handling of consignment of site.
- (b). On site assembly if any of the supplied goods, installation, testing and commissioning of the equipment.
- (c). Furnishing of detailed operations and maintenance manual for each appropriate unit of supplied Goods;

#### **8. Spare parts (GCC Clause 13)**

Add as Clause 13.2 to the GCC the following:

Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares for the Goods. Other main spare parts and components shall be supplied as promptly as possible but in any case within one week of placement of order.

**9. Warranty (GCC Clause 14)**

## 9.1. Substitute GCC Clause 14.2 by the following:-

This warranty shall remain valid for 5 years after goods or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the contract.

## 9.2. The Supplier shall, in addition, comply with the performance and/ or consumption guarantees specified under the contract. If for reasons attributable to the Supplier, these guarantees are not attained in whole or in part, the Supplier shall at its discretion either:

- (a). make such changes, modifications, and/or additions to the Goods or any part thereof as may be necessary in order to attain the contractual guarantees specified in the Contract at its own cost and expense and to carry out further performance tests in accordance with SCC 3:

**10. Payment (GCC Clause 15)**

Payment for Goods and Services shall be made in Indian Rupees as follows:

- (i). No advance payment is payable.
- (ii). Payment shall be made promptly by the Purchaser. 70% after the supply on submission of the invoice/claim by the Supplier and 30% after the commissioning of the Machine and handing over of the equipments to the end user' against furnishing of installation report, stock entry certificate, technical compliance statement from the end user'.

**11. Prices (GCC Clause 16)**

Substitute Clause 16.1 of the GCC with the following:

Prices payable to the Supplier as stated in the Contract shall not be subject to adjustment during performance of the Contract.

**12. Sub-Contract (Clause 20)**

Add at the end of sub-clause 20.1 the following:

Sub-contract shall be only for bought-out items and sub-assemblies.

**13. Liquidated Damages (GCC Clause 22)**

13.1. For delays:

Substitute GCC Clause 22.1 by the following

Subject to Clause 24, if the Supplier fails to deliver any or all of the Goods or perform of services within the time period(s) specified in the Contract, the Purchaser shall without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to 0.5 percent of the delivered price of the delayed Goods or unperformed Services for each week of delay or part thereof until actual delivery or performance, up to a maximum deduction of 10 percent of the delayed Goods or Services contract price. Once the maximum is reached, the Purchaser may consider termination of the Contract.

**14. Resolution of Disputes (GCC Clause 27)**

Add as GCC Clauses 27.3 and 27.4 the following:

- 27.3 The dispute resolution mechanism to be applied pursuant to GCC Clause 27 shall be as follows:
- (a). In the case of a dispute or difference arising between the Purchaser and a Supplier relating to any matter arising out of or connected with this agreement, such dispute or difference shall be settled in accordance with the Arbitration and Conciliation Act 1996 the Arbitral Tribunal shall consist of 3 Arbitrators, one each to be nominated by the Purchaser and the supplier. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the parties and shall act as Presiding Arbitrator. In case of failure of the two Arbitrator appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the Arbitrator appointed subsequently, the Presiding Arbitrator shall be appointed by the President of Institute of Engineers (India).
- 27.4 The venue of arbitration shall be the place from where the Contract is issued (i.e.) Chennai.

**15. Notices (clause 30)**

For the purpose of all notices, the following shall be the address of the Purchaser and Supplier.

**Purchaser:**

**Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Ltd, Anna Hospital Campus, Arumbakkam, Chennai- 600 106, Tamil Nadu.**

**Supplier: (To be filled in at the time of Contract signature)**

**16. Guarantee Period Maintenance:**

Any major repair pointed out by the Purchaser shall be rectified by the Supplier from the date of intimation within a period of 3 calendar days and commission the equipment to the satisfaction of the Purchaser. Failing which the Purchaser has a right to levy a penalty on the Supplier a sum of Rs.10,000/- per day or part thereof for each equipment until the equipments are repaired and commissioned to the satisfaction of the Purchaser.

**17. Enclosures to Bid:****17.1. Technical bid (Cover A):**

Technical Bid shall include the duly filled up, signed with office seal affixed Tender documents along with

- a). **Bid Security.**
- b). For Importers Photocopy of License renewed upto date.
- c). Documentary evidence of constitution of firm such as Memorandum of Articles, Partnership Deed, etc., with details of Name, Address, Tel. No., Fax No., E-mail Address of firm and the Chairman& Managing Director / Partner / Proprietor.
- d). Authorization of senior responsible officer of the Company to transact business.
- e). Annual turnover statement for last three years certified by the Auditor.
- f). Copies of Balance Sheet and Profit & Loss Account for three years certified by the Auditors.
- g). Sales Tax clearance Certificate as on 31/03/2017
- h). Notarised statement of the Installed manufacturing capacity of the Items quoted.
- i). Qualification Criteria - Section VIII
- j). Performance Statement - Section XII
- k). Manufacturer's Authorization Form - Section XIII
- l). Technical literature and other documents in support of the goods / service Centres in Tamil Nadu.
- m). any deviations
- n) **List of items quoted (without prices)**

**17.2. Price Bid (Cover B):**

Price bid shall include

- a) **Duly filled in Price Schedule - Section IX**
- b). **Bid Form - Section IX**

**Please note that the Bidder run the risk of his bid being rejected if the Price Schedule contains any conditions.**



**SECTION V: SCHEDULE OF REQUIREMENTS**

**SCHEDULE - A****I. EQUIPMENTS FOR TOXICOLOGY LABORATORY.**

Sl. No.	Name of the Item	Quantity
1	Uv - visible spectrophotometer	1
2	Incubator	2
3	Hot air oven	2
4	Analytical balance (4 digit)	2
5	Semi - micro balance	2
6	Ph meter	2
7	Transferpette (including eppendorf pipette)	2
8	Centrifuge	2
9	Refrigerator	2
10	Digital thermo hygrometer	1
11	Flexible digital thermometer	1
12	Shaking water bath	2
13	Micropipette (pipetman)	2
14	Htl pipette	1
15	Flash evaporator	1
16	Photographic microscope	2
17	Laminar bench	2
18	Glass double distillation unit	2

**II. EQUIPMENTS FOR ANALYTICAL LABORATORY:**

Sl. No.	Name of the Item	Quantity
1	High pressure liquid chromatograph (hplc).	1
2	High performance thin layer chromatograph (hptlc).	1
3	Fully automated gas chromatography single quadruple mass spectrometer (Gc-ms).	1
4	Automic absorption spectrophotometer	1
5	Uv-visible spectrophotometer	1

6	De freezer	1
7	Centrifuge	1
8	Microscope	1
9	Polari meter	1
10	Re fracto meter	1
11	Ultra pure water purification system	1
12	Ion meter	1
13	Ph meter (digital) bench top	1
14	Shaking water bath	1
15	Constant temperature bath	1
16	Constant temperature bath ( Circulating)	1
17	Analytical balance ( 4 digit)	1
18	Analytical balance (5 digit)	1
19	Karl fischer titrator	1
20	Muffle furnace	1
21	Freeze dryer	1

**BID SECURITY: 1% of total value quoted.  
(EMD)**

**SECTION VI: TECHNICAL SPECIFICATION**

## SCHEDULE - A

### I. EQUIPMENTS FOR TOXICOLOGY LABORATORY:

#### 1. TECHNICAL SPECIFICATIONS FOR UV-VISIBLE SPECTROPHOTOMETER

Wavelength range: 190 nm - 1100 nm.

Spectral Bandwidth: 1 nm .

Resolution: 0.1 nm.

Wavelength accuracy: UV/VIS region:  $\pm 0.3$  nm.

Wavelength repeatability: UV/VIS region: less than  $\pm 0.3$  nm.

Stray light:  $< 0.02\%$  (220 nm, NaI)  $< 0.02\%$  (340 nm, NaNO<sub>2</sub>)  $< 1.0\%$  (198 nm, KCl)

Noise level :  $< 0.00005$  Abs.

Photometric System: Double beam.

Photometric accuracy:  $\pm 0.002$  Abs at 0.5 Abs;  $\pm 0.004$  Abs at 1.0 Abs;  $\pm 0.006$  Abs at 2.0 Abs

Photometric range: -3 to 3 Abs.

Photometric repeatability:  $< \pm 0.002$  Abs at 0.5 Abs  $< \pm 0.001$  Abs at 1 Abs  $< \pm 0.003$  Abs at 2Abs.

Baseline stability:  $< \pm 0.003$  Abs/Hr.

Baseline flatness:  $< \pm 0.0006$  Abs(190 nm-1100 nm, one hour after light source turned on)

Detector : Silicon photodiode.

Light source: 20 W halogen/D2 lamp.

Powerful 32-bit Windows XP Professional based Spectroscopy Software to be supplied as standard.

All operational modes as standard - Photometric; Spectrum; Quantitation; Kinetics, Time Scan, DNA and Protein Quantitation in stand-alone and PC mode. Additionally Multi- Component measurement should be available in stand-alone mode.

#### 2. TECHNICAL SPECIFICATIONS FOR INCUBATOR

Double walled inside chamber and shelves made of Aluminium / Stainless steel. Insulation of 75 mm by mineral wool. Outside mild steel painted in paint coating with perforated / wire mesh adjustable shelves. Two air vents on both sides of the instrument. Two indicators and one On/Off switch to work on 220/230 volts A.C with one Number air circulation fan for uniform temperature throughout the chamber. Viewing window provision on the incubator door for specimen observation. Micro processor electronic digital temperature controller cum indicator.

### **3. TECHNICAL SPECIFICATIONS FOR HOT AIR OVEN**

Temperature range: Ambient to at least 250°C.

Temperature stability:  $\pm 2^\circ\text{C}$ .

Housing materials: Steel sheet duly powder coated.

Duty cycles: Continuous.

Interiors: Stainless steel 304 grade heavy gauze to with stand temperature up to 350°C.

Insulations: High temperature, ceramic blanket.

Power consumption: 220/230V AC & 177; & 10% 50 HZ.

### **4. TECHNICAL SPECIFICATIONS FOR ANALYTICAL BALANCE (four digits)**

Self calibration Capacity: 0.01mg-220gm.

Pan size: 80 mm.

Linearity:  $\pm 0.2$  mg.

Repeatability standard deviation:  $>/=0.1$  mg.

Response time: 12/3 sec.

Sensitivity against temperature change Specific gravity measurement software  
% display function Unit conversion Calibration report ISO/GLP Compliance for  
printing the value (weights, calibration with date & time).

### **5. TECHNICAL SPECIFICATION FOR SEMI - MICRO BALANCE**

- a) Type : Poly range (2-3).
- b) Max Capacity : 0 to 60/80 to 210/220g.
- c) Readability : 0.01 to 0.05 mg.
- d) Response time (avg) :  $\leq 8$  s.
- e) Repeatability :  $\leq \pm 0.015 \leq \pm 0.040$ .
- f) Linearity :  $\leq \pm 0.15$  mg.
- g) Draft shield with motorized opening / closing of doors and foot switch / hand free operation is required. Touch screen (preferable) digital display, tare button.
- h) Fully automatic calibration and adjustment functions (for temperature and linearity).
- i) Option for neutralized the static electricity.
- j) AC adopter and UPS (0.5 kv ) should be provided for this balance.
- k) Printer and data interface port.
- l) Plastic cover for balance, brush, spatula and forceps should be provided with balance with min. one spare of each.
- m) Sensitivity to temperature and stability should be given.
- n) Sensitivity offset and minimum weight should mention.

- o) Built - in software supports for laboratory weighing application like density determination, Differential weighing. Air buoyancy correction, Air density determination etc.

## **6.TECHNICAL SPECIFICATIONS FOR pH METER**

### **pH METER (DIGITAL) BENCH TOP**

Microprocessor based bench top pH meter for routine measurement of pH/mV & temperature with batteries or mains operation and large multifunction digital display, automatic temperature compensation, and parallel temperature display, 5- point calibration system in a set including gel filled pH combined electrode with inbuilt temperature sensor. The equipment should be waterproof, lightweight and portable.

Digital Range	0.00 to 14.00 pH
Resolution / Accuracy	$\pm 0.005$ pH
Calibration	5 point calibration
MV range	-999.9 + 999.9 mV: -1.999... +1.999 mV
Resolution / Accuracy	0.1 mV/ $\pm 0.3$ mV ( $\pm 999.9$ mV); 1 mV/ $\pm 1$ mV (beyond $\pm 999.9$ mV)
Temperature Range	-5° C to 105° C
Resolution / Accuracy	0.1° C/ $\pm 0.1$ ° C
Temp. Compensation	Automatic
Reference Temperature	Selectable between 20& 25° C
Data Out put	Via display and USB port
Power Supply	Mains 230 $\pm 10$ volts, 50 Hz. AC power and 4 x 1.5 volts Rechargeable AA batteries
Protection Type	IP 67, IP 67
Warranty	3 years on instrument & 1 year on electrodes
Internal Diagnostic / Self Test facility	Yes
Splash Proof Housing	Yes
Display	LCD, also display condition of Electrode
Simultaneous Temperature & PH Display	Yes
Membrane keyboard with pressure defined points	Yes
Memory Data Set	800
GLP Supports Functions	Yes

Calibration Protocol	Yes
USB Port	Yes ( To attach Normal Printer & PC)
Limit value Settings	Yes
Printer Option	Yes ( Thermal Printer not accepted)
Sensor Validation	Yes

### **Combined Electrode Specifications**

Measuring Range	0.....14 pH
Operating range (Deg C)	0.....80
Reference Electrolyte	Gel with one year replacement warranty
Membrane Shape	Cylindrical
Membrane resistance at 25 Deg C	< 1 Gohm
Diaphragm	Ceramics / Glass
Shaft Materials	Noryl / Epoxy
Temperature Sensor	Built in NTC

### **Accessories:**

- (i) Power cord, Operational & Service Manual ( Two copies of each), freely adjustable Electrode Stand Beakers for Calibration
- (ii) NIST Traceable pH Buffer solution 1.68, 4.01. 7.41. 9.18 (5 x 100 ml of each with Certificate.
- (iii) The PH Meter should be calibrated from NABL accredited calibration laboratory and calibration certificate will be provided.

### **7. TECHNICAL SPECIFICATION FOR TRANSFERPETTE (INCLUDING EPPENDORF PIPETTE)**

- Use: for micro injection and micromanipulation purposes.
- With high accuracy and precision, Variations in volume acceptable as permissible in calibration requirements.
- With tip ejector mechanism.
- Made of corrosion proof material.
- Should be disinfect able to quality requirement levels.
- Shall meet IEC - 60601 - 1 - 2: 200 (or equivalent BIS) general requirements of safety for electromagnetic compatibility.
- Should be capable of being stored and operable at ambient temperature.
- Should be compliant to ISO 13485: Quality systems.
- User/ Technical/Maintenance manuals to be supplied in English.



- Log book with instruction for daily, weekly, monthly and Quarterly maintenance checklist.
- Certificate of calibration and inspection from the factory.
- Spare parts and accessories should be provided with the pipettes.

#### **8. TECHNICAL SPECIFICATION FOR CENTRIFUGE**

1	Max Speed	>5000 rpm
2	Max Ref	>3000
3	Speed Indicator	Digital
4	Speed Regulator	Step less preferred
5	Count down timer	Up to 1 Hour
6	Accessories	Swing out rotor head 8 x ~15 mL with graduated glass tube Angle rotor head 8 x~ 15 ml polypropylene tube
7	Warranty	Preferably 3 years
8	Voltage / frequency in put	According to Indian option and good tolerance to the fluctuation.
9	Safety	Lid interlock for cover opening during centrifugation.

#### **9. TECHNICAL SPECIFICATION FOR REFRIGRATOR**

1. Description: Vertical, frost free, CFC free, Single Glass Door, Door with lock and key.
2. Capacity: From 300 - 360 L
3. Temperature range: Should be form 2°C - 8°C throughout the Chamber
4. Temperature should be controlled by micro - processor controller
5. Should have digital display of temperature
6. Number of Shelves: Should have 04 nos
7. Should be supplied with suitable voltage stabilizer
8. Power supply : 203 V AC, 50 -60 Hz
9. Warranty: 3 years
10. Annual maintenance service beyond warranty: 3 Years

#### **10. TECHNICAL SPECIFICATION FOR DIGITAL THERMO HYGROMETER**

Digital hygrometer to measure wet bulb temp. & dry bulb temp. with least count 0.5 deg. & directly display the humidity of mine air.

**11. TECHNICAL SPECIFICATION FOR FLEXIBLE DIGITAL THERMOMETER:**

- Range of temp. measurement 32 C - 42 (89.6 F - 107.6 F).
- Can be calibrated in both centigrade and Fahrenheit, but if only one option is available, then Celsius is preferable.
- Easy to read LCD display.
- Buzzer signal function.
- Takes 60-90 seconds to measure temp.
- Can be used in the armpit / axilla, orally and rectally.
- Accuracy of temperature +1 C and +0.2F.
- Two year manufacturer comprehensive warranty for function performance and also against manufacturer defect.

**12. TECHNICAL SPECIFICATION FOR SHAKING WATER BATH**

- 15 Liters Capacity.
- Working temperature range : 20° C to 99° C.
- Body inner tanks and gable cover made up of high grade corrosive resistant and trust free stainless steel with provision of easy cleaning.
- Adjustable shaking frequency from 20 to 250 oscillation per minute (rpm) or rotation per minute (rpm).
- Microprocessor Technology for controlling the shaker speed and also to cuts off higher temperatures to provide temperature stability.
- Temperature and shaking frequency indicator with external bright LED based multi digital Display.
- Alarm for high and low set temperature along with water level indicator.
- Built in electronic timer option should be included.
- Automatic shutdown function.
- Water proof soft key pad for easy entry of temperature and shaking speed range.
- Main switch and cord should be water resistant.
- Provision of drain tube for emptying of eater bath.
- Single phase current option at 220 volts.
- Energy efficient certification compliance required.
- Users list must be provided.

### **13. TECHNICAL SPECIFICATIONS FOR MICROPIPETTE (PIPETMAN)**

Measuring capacity 10-100  $\mu\text{l}$ ; 100-1000  $\mu\text{l}$  500 - 5000  $\mu\text{l}$  Single channeled adjustable volume, dispensing error  $<\pm 1\%$  Spring loaded tip cone, tight to fit universal tips in each category, ergonomic design Adjustment opening for specific liquids and volume Secondary adjustment for specific liquid. Lightweight piston made of For ton Ejector should be smooth with ergonomic design Volume display: four digits fully auto-clavable.

### **14. TECHNICAL SPECIFICATION FOR HTL PIPETTE:**

- Very less aspiration and dispensing forces.
- Dry seal technology and grease free operation.
- Color coded push buttons, should be GLP compliant.
- Fully adjustable air displacement.
- PVDF body, minimum warming effect during long pipetting.
- Body should be resistant to aggressive chemicals.
- Stainless steel piston.
- Calibration should not change even after the pipette is opened for cleaning and reassembled.
- Autoclavable tip holder and tip ejector.
- Universal Tip compliance.
- Easy maintenance.
- Should be certified to ISO 9001 and confirm to ISO 8655 and CE certified (IVD).

### **15. TECHNICAL SPECIFICATION FOR FLASH EVAPRATOR**

#### **Main unit**

1. Sample volume range : 50 ml to 3000 ml.
2. Rotation speed : 20-240 rpm.
3. Rotation speed display : LCD.
4. Hand/Motor lift: motor fit.
5. Supply voltage ; 230 V , 50 Hz.
6. Lifting stroke : 160 mm.
7. Head till angle : 0-60°.
8. Motor power : 40 W.

9. Automatically lifting up when no electricity.
10. Dimension : 380 mm Lx 340 mm W x 692 mm H.

### HB-03 plus Heating bath

1. Bath Temperature Range : Ambient ~ 180°.
2. Temp. control Mode : PID control & LCD display.
3. Overheat cut-off protection: 190°C.
4. Temperature Stability:  $\pm 1^\circ\text{C}$ .
5. Bath Volume : 5L.
6. Material bath: stainless steel with Teflon coating.
7. Heating power : 1300W.
8. Collection Vessel : 1000 ml.
9. Rotation flask : 1000 ml.
10. Condenser type: Vertical type and water refrigerating .

## 16. TECHNICAL SPECIFICATION FOR PHOTOGRAPHIC MICROSCOPE

Sl. No	Specification of item	
<b>1. Microscope</b>		
1	Optical system	Infinity optical system
2	Eyepiece tube	A. Trinocular tube with inclination angle of 20° to 30° B. Diopter adjustment on both sides. C. A port for attaching digital camera
3	Eyepiece lens	10x (2pcs) with field of view of 22 mm or higher should be anti-fungus type
4	Objectives	A. 2x, 4x, 10x, 40x, 60x and/or 100x. B. Numerical apertures to range from 0.06 mm to 1.25 mm proportionate with objective resolution. C. Working distances to range from 30mm to 0.25mm D. All should be long working distance plan-achromat objectives.
5	Nose piece	Sextuple nose piece to accommodate six objectives
6	Coarse/fine focusing	A. Coarse focus to facilitate movement of 10 to 14mm per rotation. B. Fine 0.06 to 0.12 mm per rotation.
7	Mechanical stage	A. Should have scratch-proof super-hard ceramic coated surface, B. Stage handle Height & tension should be

		adjustable. C. Coaxial 'x' and 'y' motion control (with scale on both axes) Should be low positioned on Right-hand side. D. Should at the least have a capacity to hold two glass slides at a time.
8	Condenser	Swing out condenser suitable for operation for 2x-100x objectives.
9	Illumination	High intensity uniform LED illumination
10	Magnification	Final magnification should be in the range of 20x to 1000x
11	Up-gradation	The microscope should be upgradable to phase contrast, Fluorescence and simple polarizing.
<b><u>II. Digital CCD Camera</u></b>		
12	Digital camera	Capable of handling brightfield. Fluorescence, DIC darkfield images.
13	Resolution	Should have high density CCD chip with higher than 5 million effective pixel resolution even at dim light.
14	Live display	A. 5 to 35 frames per second B. Binning modes of 2x2 and 4x4 C. Digital zoom up to 16 x through multiples steps D. shooting interval to range from 5 sec - 12 hr
15	Image capture	Image capture should be enabled either through software or directly from microscope.
16	Data collection and processing	A. Compatible software for acquiring, Capture & analysis of images. B. Branded portable computer with i5 processor, dedicated graphics and media for image analysis, 4GB RAM, DVD Writer 1 TB HDD 18.5" TFT Monitor along with UPS.
17	Fast transmission of data	Fire wire port for attaching camera onto computer.
18		International Regulatory certification: CE Certified
19	Warranty	03 years comprehensive warranty 02 years non-comprehensive warranty and 5 year AMC after warranty period

## **17. TECHNICAL SPECIFICATIONS FOR LAMINAR BENCH**

Laminar cabinets inner chamber and outer chamber made of stainless steel high efficiency particulate air filters, to achieve the air purification up to 0.3 Microns in working areas.

### **WORKING AREA 4 FT X 2 FT X 2FT**

Blower fitted with ¼ Hp motor, with RPM 1200 to 1400.

Pre filters made of high grade nylon net fixed in S.S. frame for first stage air purification. Through blower system.

Closed inner chamber fitted with HEPA having very accurate performance rate of air filtration, rated 99.99% resulting in ceasing all air bore molecule of particulate up to 0.3 micron in working area of Laminar Bench.

Working area of Laminar Airflow Cabinets illuminated by fluorescent lights cabinets operated at 230 V Single phase 50 Hz. AC supply.

Fitted with UV Germicidal lamp for sterilization.

Fitted with Acrylic front door sliding type.

Fitted with Manometer for measurement of HEPA filters choking systems.

Fitted with cock for gas connection.

## **18. TECHNICAL SPECIFICATION FOR GLASS DOUBLE DISTILLATION UNIT**

1. Should be made of high quality borosilicate glass to withstand high heat.
2. Output capacity : 1.5 liters/ hour(min) .
3. Should be double stage.
4. Should have rust proof metallic stand and other accessories.
5. Heater should be of quartz for immediate output of distilled water.
6. Borosilicate boiler with water leveller.
7. Output water should be pyrogen – free, with conductivity less than 1  $\mu$ S (microsiemen), pH 6.9 - 7, distillate temp 65 - 75 ° C.
8. Automatic cut off device or safety control module preferably with audio alarm

9. Should be provided with a compatible water softener
10. All other material/accessories including rubber tubing (10m) required for operationalizing the distillation water.
11. Power input to be 220 - 240 VAC, single phase, 50 Hz.
12. Manufacturer should have ISO/CE certification for quality standards.

## II. EQUIPMENT FOR ANALYTICAL LABORATORY

### 1.HIGH PRESSURE LIQUID CHROMOTOGRAPH SPECIFICATIONS

#### SOLVENT DELIVERY SYSTEM

- Gradient analysis: Supported through low pressure quaternary mixing
- Number of solvents 1 to 4.
- Flow rate setting range:  $\geq 0.050$  - 5ml/min in 0.01ml/min increments or better.
- The effective delay volume should be less than 700  $\mu$ l and should be independent of backpressure.
- Flow accuracy  $\pm 1\%$ , Flow precision  $\leq 0.075\%$  RSD.
- Operation pressure range:  $\geq 5000$ psi.
- Composition range:  $\geq 0.0$  to 95 in 0.1% increments with precisions  $\leq 2\%$  RSD.
- Automatic rinsing of plunger, Leak sensor.
- Solvent conditioning with a degassing unit. (Online degassing facility with minimum of 2 solvents at a time).
- Thermostatic column oven - temperature range : min ambient to 60° C in 1°C increments with min. capacity holds 2X25 cm columns or better.
- It should be an automated pump with continuous solvent compressibility compensation.

#### Auto sampler

- Variable injection volume type with sample injection volume range : 0.1  $\mu$ L to 100  $\mu$ L in 0.1  $\mu$ L increments and with optional sample loop  $\geq 1000\mu$ L
- Injector linearity  $\geq 0.999$  co-efficient of deviation.
- Total sample capacity  $\geq 100$  vials (1ml)
- Injection volume accuracy:  $\leq 2\%$ ,
- Injection precision: Less than 0.5% RSD or better.
- Carry over: Less than  $< 0.1\%$
- Equipped with a leak sensor, automatic rack and vial recognition as safety features.

#### UV Detector

- Detector resolution of 12 nm.
- Wavelength range 190 to 600 nm or better.
- Wavelength accuracy  $\pm 1$ nm.
- Flow cell :  $\leq 10$  mm path cell volume 10  $\mu$ l or better.
- Drift  $\leq 0.5-1.0 \times 10^{-3}$  AU/hour.
- Linearity  $\geq 2.0$ AU.



**Refractive Index Detector**

- RI Range:1.0 - 1.75 RIU.
- Short term noise:2.5x10<sup>-9</sup> RIU or better.
- Drift, 2.0x10<sup>-7</sup> RIU per hr.
- Cell volume,9 micro litres.

**Software and Data Management**

- The Chromatography software should be embedded with data base preferably Oracle.
- Instrument control, computerized system validation functionality and compliance to GLP.
- Data analysis software for spectra evaluation, libraries and peak purity functions.
- Continuous tracing of instrument usage in terms of lamp bum time, feedback messages, safety and maintenance: error detection, display, leak detection, safe Leak handling.
- Seamless control by chromatography data software through open interface for multi - vendor hardware control and compliance to GLP/GMP and US FDA 21 CFR part 11.

**Accessories other conditions:**

- Compatible PC & Laser jet Printer.
- C18 and C8 Columns 1each.
- Aminex (NH<sub>2</sub>).
- Syringes: 2.
- Solvent Reservoir Tray.
- Suitable UPS with built in isolation transformer with minimum ½ hrs backup should be provided.

**2. SPECIFICATIONS FOR HIGH PERFORMANCE THIN LAYER CHROMOTOGRAPH****HPTLC SYSTEM MANAGER:**

Software to control, document and manage all the instrumental steps of HPTLC analysis incl. application, development, scanning and photo documentation. 32 bit, windows based, upgradeable. For creating and storing methods. Single report GLP compliant. Latest version

### AUTOMATIC TLC SAMPLER

Fully automatic TLC Sample Applicator, PC control or stand alone mode. Fully automatic samples as spots, band or rectangles. Spray on, 4 pattern.

Applicator - Quantitative analysis, micro-preparative, in-situ and superimpose. 10-method memory storage, Sample positioning on X & Y axis freely selectable, variable rate of delivery, accepts 10, 25, or 100 ul syringes.

Sample racks for 66 standard 2 mL vials. Self diagnostic + Validation + Link to System Manager.

### CHROMATOGRAM DEVELOPMENT CHAMBERS

All glass, small internal volume chambers, bottom divided into two halves; maximum 5-15 ml mobile phase / run, S.S. leak - proof lid. Appropriate size chambers for 20 x 20, 20 x 10, 10 x 10, cm plates.

### PROFESSIONAL TLC / HPTLC PHOTODOCUMENTATION

#### SYSTEM under GLP

Professional TLC / HPTLC Photo documentation System, comprising : One Specifications of Instruments for Physico-Chemical Laboratory Illumination Unit, Industrial Camera and HPTLC specific software.

**Illumination unit**- with 254 + 366 nm UV. Visible light (above & below object).

Uniform illumination. 60 KHz supply for instant, flicker less illumination.

Easy access for changing tubes & filters and PCB. Auto switch off. Total darkness.

Viewing window to see plate. Safety - UV switched off if door opened.

**Camera** 12 bit, high resolution industrial camera (4096 grey level resolution).

Images of the highest quality. Fixed focus for total reproducibility. True colours capture. Very linear response. Individually calibrated.

**HPTLC Specific Software**- Automatic image optimization. Automatic exposure time to suit brightest zone within dynamic range of CCD. Full function annotation. Rf scale. Child image with or w/o ROI (Region of Interest) blow up. Auto image capture at 254nm and or 366nm and or white light. Raw data inaccessible to user.

Spot application tool to detect faintest fractions. High speed data transfer 1 sec. / image.  
Link to System Manager.

Image comparison viewer software that allows comparison of different tracks from different plates under GLP.

### **UV CABINET:**

Dual wavelength 254 + 366 nm UV Cabinet with a digital camera mounts.

Enables to inspect the plate and 100% safe to eyes.

Auto shut off. Flicker less illumination. Guaranteed illumination intensity.

### **20 X 10 CM DIP TANK WITH LID FOR DERIVATIZATION TLC SCANNER WITH DATA EVALUTION :**

Wavelength range 190-900 nm. Monochromatic flushing by nitrogen.

Light source- Deuterium, halogen and mercury PC controlled instrument for the measurement of the absorbance and fluorescence (with four cut off filters 370,420,450,550 nm and one free position for a user specific filter ) High sensitivity photomultiplier for detection Spectra can be recorded over the entire wavelength range without any need for manual moving of the light source in the optical path. Automatic spectrum scanning for purity, identification and optimum wavelength check the size of the scanning beam may be adjusted from 20  $\mu\text{m}$  - 2mm in slit width and 0.4 - 10 mm in slit height Five stepping motors are used to set the lamp selection mirror, diffraction grating, filters, slit width and slit height Speed: maximum 200 mm/sec Object sizes : upto 265X200X4mm 1 - Multiwavelength S/W:Scan up to 31 wavelengths, Data stored & 3D Display, Automatic quantification with respect to  $\lambda_{\text{max}}$  of reputed features.

### **Spectrum Library**

S/W: Facility to create own library.999 Spectra Profile.

All files searched automatically  $\lambda_{\text{max}}$  as well as Rf.

### **PLATE IMMERSION DEVICE FOR DERIVATIZATION**

Uniform distribution of derivatisation reagent. Suitable for 20 x 20 cm & 20 x 10 cm plates; Universal plate holder clamp; Dipping speed -30 mm to 50 mm /sec., variable; Dip time - 1 to 8 secs.

+Indefinite. Ribbed and narrow dip chambers for low volume of reagent.

Battery operated. Complete with 20 x 10 cm dip tank & lid.

### **AUTOMATIC TLC SPRAYER**

Pneumatic cordless TLC Sprayer with rechargeable batteries. Non - clogging very fine uniform spray. Resistant to corrosive reagents with accessories.

### **TLC / HPTLC PLATE HEATER**

Stain resistant ceran glass top; temp range 25 to 200C. Uniform heating of plate.

Digital display of set & actual temp. Display on as long as plate is hot. Upto 20 x 20 cm size plates.

### **HPTLC Multipurpose Chamber for Method Development.**

Rapid Screening of samples. Can run six mobile phases on one plate, side by side, at the same time with or without saturation. New method developed in 3 - 4 runs with mobile phase creation guide.

#### **Consumables :**

Plate cutter

Drying Rack

TLC Plate box

Test Dry mixtures

HPTLC Plates

one box (silica gel 60F 254 and without F) must be provided.

N2 cylinder-For purging with regulator,

UPS/V. stabilizer, PC & printer must be provided.

Indian agent must arrange training at the site of manufacturing unit.

Training at the time of installation should be also be provided to the respected user.

Indian agent must be qualified for IQ-OQ certification.

### 3. Specifications for Fully Automated Gas Chromatography Single Quadrupole Mass Spectrometer (GC-MS)

A Complete setup of GC-MS System is required with highest quality performance for comprehensive Metabolomics applications.

#### **A. GC Specifications:**

1. A GMP compliance GC system with oven operating Temperature from ambient to 450°C with fast oven heating from 50 to 450°C in 5 minutes and cool down time from 450 to 50°C in 4 Minutes.
2. 15-Step or more oven temperature programming.
3. Full electronic Pneumatic control of all the modules of GC should be 15 Channels. or more including auxiliary gases.
4. One capillary split/split less and one PTV split/split less injection port.
5. Use of capillary columns (50-320 Micron and Above).
6. Use of Helium or Hydrogen as a carrier Gas.
7. Auto sampler with capacity to hold 15 or more vials.
8. GC-MS direct interface operating temperature from ambient to 350°C.
9. Gas filtration for inlet of GC.
10. It should include FID Detector with following properties:
  - Detection limit < 1.5 pg c/s or better
  - Data acquisition speed up to 400 Hz or better
  - Dynamic Range >10<sup>7</sup>
11. The pressure set points should be adjustable by increments of 0.001 psi up to 100 psi.
12. Head Space Sampler with minimum 12 vials capacity with Pneumatic control and should have option for priority vials.
13. The Head Space Sampler should be transfer line based with loop system for precise quantification and it should be from same manufacturer. It should have up gradation facility as well.
14. System should have capability of locking / adjusting the retention times so that same retention time can be reproduced from system to system and the method should be electronically transferred. NIST 2011 library along -with AMDIS/DRS software should be provided and also retention time locked databases with NIST Database.

#### **B. Mass Spectrometer Specifications:**

1. Dedicated electron ionization (EI) source with positive and negative modes of operations.
2. Dedicated chemical ionization (CI) source with positive and negative modes of operations.

3. It should have automated tuning for EI/CI.
4. Dual filament for easy switching in EI mode.
5. A Quadruple Mass Analyzer with a mass range up to 1050 amu or better preferably monolithic quartz type.
6. Mode of scanning: Full Scan or SIM.
7. Scan speed up to 12,000u/sec or better.
8. Provision for quadruple heating (150°C or above) to keep the source clean for a long period.
9. Ionization source temperature programmable up to 350°C.
10. It should include turbo molecular pump with 260 L/Sec capacity or better.
11. Unit resolution across the total mass range.
12. Mass Stability :  $\pm 0.1$  units over 48 Hours.
13. EI Sensitivity: Sub picogram sensitivity with full scan (S/N:1000:1 or better) and femtogram sensitivity under SIM mode.
14. High speed scanning: 20spectra/sec or better.
15. Capable to run up to 90 SIM ions or above.
16. Automatic Tuning, calibration and snapshot capabilities.
17. Electron multiplier detector for mass spectrometer.
18. A certificate of the principle be included stating the instruments spares and services will be available for 10 years after the supply.
19. User friendly software to control GC,MS, auto sampler and all instrumental operations included qualitative and quantitative data analysis and automatic report generation (original CD with license number).
20. Latest version of NIST databases (including original CD) with license number from manufacturer.
21. Tool kit for routine maintenance of GC and MS.
22. The system must have metabolite identification. Quantification software and also pathway analysis software.
23. The system should be capable of replacement GC column without venting MS vacuum which results in elimination of GC/MS downtime.
24. Splitting of one column effluent to FID and MSD with software controlled flow so that both detectors have the same RSD. The device should have pressure controlled carrier flow and should be controlled by software.

### **C. Other requirements:**

1. Branded PC and printer to be supplied from factory along with the system directly.
2. Suitable table/tables with granite flooring, electrical switches and power supply extension to accommodate GC-HS-MS system with PC and printer.
3. UPS with built-in input and output isolation transformer .Compliable for inductive loads; SMF batteries: Minimum one hour backup with full load (UPS suitable for IT/NET work load not acceptable). It should be with 5 years comprehensive warranty

- to keep system in continuous working condition.
4. All the necessary calibrants of GC-MS to be provided.
  5. Consumable spare parts for five years (the list at least include source filaments - 20 Nos, Source Heater-20 Nos. Injection port glass liners- 10 Nos. GC Septum -200 Nos, Column inlet/outlet nuts-10each, inlet/interface fermles-20each. Source insulator. Vacuum oil 5 Nos).
  6. Warranty: Five Years Comprehensive Warranty and additional two years maintenance warranty must be provided in order to keep system in continuous working conditions.
  7. System should come with three each of different stationary phase columns for metabolomics applications.
  8. Prices of all individual item components must be quoted.
  9. Vendor should provide the list of users with their telephone numbers, complete address.
  10. Spectral libraries: NIST latest version with license.
  11. The system should be supplied with fully compatible Fiehn GC-MS metabolomics RTL library.
  12. Instrument must be attended within 48 hours in case of breakdown. Down time of instruments will be less than 5% of the warranty period per year. In the event of longer down time the vender shall increase the comprehensive maintenance period by five times of the down time.
  13. The company should indicate the percentage discount on the list price of the spares to be replaced, if any, during non-comprehensive warranty period. Vendor should assure the availability of the spares for 10 years from date of installation.
  14. Vendor should provide onsite and offsite training at accredited laboratory as well as application support for optimum use of equipment.
  15. System should run on operating voltage 230v,50Hz.
  16. Documentation: All the manuals like operation, service. And maintenance with all electronics circuit diagram to be provided.
  17. If there is any up-gradation of software-within the period of warranty then the same should be provided free of cost by the supplier/m

#### **4. TECHNICAL SPECIFICATIONS FOR ATOMIC ABSORPTION**

##### **SPECTROPHOTOMETER**

Fully automated and Integrated type PC controlled true double beam multi element Atomic Absorption Spectrophotometer system with absorption and emission capability with deuterium background correction and should have the capability of measuring multi elements using hollow cathode lamps to analyze the samples for subsequent elements with following specifications:

- 1. OPTICS:**  
Optical double beam fully sealed optics against dust and vapour. Automatic wave length and slit selection with automatic peaking.
- 2. MONOCHROMATOR:**  
Czerny turner/equivalent with 250mm focal length with holographic grating.
- 3. WAVELENGTH RANGE:**  
190-900nm.
- 4. Slits of 0.2, 0.5, 0.8 and 1.2nm full height and wide range PMT/Solid state detector to cover entire wave length.**
- 5. BACKGROUND CORRECTION:**  
High intensity deuterium background correction up to 2.5 Abs at 2ms response time with electronic modulation and automatic attenuation and self reversal.
- 6. LAMP SUPPORT :**  
At least 8 mounted in fixed lamps in fixed positions with fast lamp selection using mirror and automated lamp selection.
- 7. Burner:**  
10cm air acetylene burner and 5 cm nitrous-oxide acetylene burner with Teflon coating must be quoted separately
- 8. SAFETY SYSTEM:**  
Safety Inter locks for burner, liquid trap, pressure relief valve flame shield, flame operation, mains power, gas and oxidant pressure, safety reservoir, spray chamber.
- 9. GAS CONTROL:**  
Instrument should have fully automatic programmable gas control and automatic change over between Air Acetylene and Nitrous oxide flame.
- 10. SENSITIVITY:**  
At least 0.9 Abs with 0.5% RSD from ten to five second Integrations for 5 ppm Cu standard.
- 11. COOED HOLLOW CATHODE LAMPS:**  
Single element coded hollow cathode lamps should be quoted with the system for the elements namely, Lead, cadmium, zinc, arsenic, copper, tin, mercury and nickel.
- 12. SOFTWARE & COMPUTER/PRINTER:**  
Latest configuration and laser jet color printer. AAS software for automatic analysis, parameter setting, concentration computation, base line correction, report generation. Built In library for reference purpose, QA/ AC data logging, etc.,



**13. GRAPHITE FURNACE:**

Fully automated constant temperature zone graphite furnace. Dynamic feedback temp. Control, cooling water temp compensation .Up to 20 temp steps per program, Temperature programmable from 40 to 3000 deg C with maximum heating rate up to 2000 deg C/sec. Choice of two Inert gases with programmable flow rate, Solid titanium work-head for maximum corrosion resistance. Quartz windows for high light energy..Comprehensive safety Interlocks for gases, water flow and temp, tube and transformer temperatures.

**14. RECIRCULATING WATER CHILLER:**

With flow rates of 1.5-2L/min at 175- 200kPa for cooling of graphite furnace and controlled through AAS software.

**15. VAPOUR GENERATION:**

Fully automated computer controlled VGA for determination of hydride forming elements at ppb level.

**16.ACCESSORIES:**

Graphite Tube 50nos, Air compressor, Nitrous Oxide gas regulator with preheater, Acetylene, Argon Gas cylinders with Double stage regulator, fumehood, suitable online UPS with 30 minutes backup.

**17.OPERATING MANUAL:**

Soft and Hard copy of Operating Manual along with troubleshooting solutions to be provided.

**18. OTHERS:**

Noiseless Air Compressor.

**5. TECHNICAL SPECIFICATIONS FOR UV-VISIBLE SPECTROPHOTOMETER**

Wavelength range	: 190 nm - 1100 nm
Spectral Bandwidth	: 1 nm
Resolution	: 0.1 nm (0.1 nm)
Wavelength accuracy	: UV/VIS region: $\pm 0.3$ nm
Wavelength repeatability	: UV/VIS region : less than $\pm 0.3$ nm
Stray light	: < 0.02% (220 nm, NaI) < 0.02% (340 nm, NaNO <sub>2</sub> ) < 1.0% (198 nm, KCl)
Noise level	: < 0.00005 Abs
Photometric System	: Double beam
Photometric accuracy	: $\pm 0.002$ Abs at 0.5 Abs; $\pm 0.004$ Abs at 1.0 Abs; $\pm 0.006$ Abs at 2.0 Abs
Photometric range	: -3 to 3 Abs
Photometric repeatability	: < $\pm 0.002$ Abs at 0.5 Abs < $\pm 0.001$ Abs at 1 Abs < $\pm 0.003$ Abs at 2 Abs
Baseline stability	: < $\pm 0.003$ Abs/Hr

Baseline flatness	: < $\pm 0.0006$ Abs(190 nm – 1100 nm, one hour after light source turned on)
Detector	: Silicon photodiode
Light source	: 20 W halogen/D2 lamp

Powerful 32-bit Windows XP Professional based Spectroscopy Software to be supplied as standard.

All operational modes as standard – Photometric; Spectrum; Quantitation; Kinetics, Time Scan, DNA and Protein Quantitation in stand-alone and PC mode. Additionally Multi-Component measurement should be available in stand-alone mode.

## **6. TECHNICAL SPECIFICATIONS FOR DEFREEZER**

1. Capacity 1 65 Ltrs or better, Inner working Chamber size 80x45x45cm (HXWxD) or better.
2. Continuous Working Temp. Range: from Ambient to -40°C or lower
3. Temperature Controller: Microprocessor Digital controller with PT 100 sensor Control accuracy:  $\pm 1 - 1.5$ °C or better.
4. Audio-visual Alarm for temperature variation.
5. CFC free hermetically sealed refrigeration system with compressor. Charged with refrigerant to pull down the temperature up to -40°C.
6. Mounted Heavy duty Castor wheels for easy movements
7. Duly Polished 304 Grade Stainless Steel inner chamber or better material
8. Outer body made-up of Mild Steel with Epoxy Powder coated and rusting free material.
9. Fin & Tube type air-cooled condenser or any other better technology.
10. Double walled main door with sub doors arrangements.
11. Sub doors made of FRP Sheet or better material with special silicon Gasket system for leak proof.
12. Heavy duty hinges with toggle type.
13. High density PUFF Insulation of 125 mm thickness is filled on all side including door.
14. Power supply 230V, AC, 50Hz.

**7. TECHNICAL SPECIFICATIONS FOR CENTRIFUGE**

1	Max. Speed	> 5000rpm
2	Max.ref	>3000
3	Speed Indicator	Digital
4	Speed regulator	Step less preferred
5	Count down timer	Up to 1 hour
6	Accessories	Swing out rotor head 8x~15mL with graduated glass tube Angle rotor head 8x~15ml with poly propylene tube
7	Warranty	Preferably 3 year
8	Voltage / frequency input	According to Indian options and Good tolerance to the fluctuation
9	Safety	Lid interlock for cover opening during centrifugation.

**8. TECHNICAL SPECIFICATIONS FOR MICROSCOPE****Binocular Microscope:****Item Specification:**

Hallogen light illuminator

Achromatic objectives, 4 x, 10 x, 40x (spring), 100x (oils spring) Paired eye pieses (10x)

Antifungal optics

Coaxial coarse and fine focusing controls Anti fungus lens. Eye piece. body.

Preferred Make: Olympics, Leica or any other equivalent

**9. TECHNICAL SPECIFICATIONS FOR POLARIMETER**

Angular Degrees ( $^{\circ}$ A)- Sugar - ISS ( $^{\circ}$ Z)- User/Other

0-360 (selectable) -225 to +225 Up to 500 incl. Specific Rotation,

Purity, % Concentration, Invert Sugar, Inversion % etc

Resolution Angular Degrees ( $^{\circ}$ A) -0.01 / 0.001

Sugar Resolution-ISS ( $^{\circ}$ Z) - 0.01 / 0.001

Angular Degrees ( $^{\circ}$ A)  $\pm$ 0.01

Sugar - ISS ( $^{\circ}$ Z)  $\pm$ 0.03

Reading Time (s) - 4 - 30 seconds (selectable)

Interfaces-1 Parallel (printer), 2 x Serial (RS232)

Sample Illumination-Light Emitting Diode 589nm

Stored Results-700 Readings.

#### **10.TECHNICAL SPECIFICATIONS FOR REFRACTOMETER**

<b>Digital Refractometer</b>	
Range	Refractive Index: 1.32422 to 1.70000
	Brix : 0.00 to 100.00% (ATC)
Accuracy	R.I : $\pm 0.0001^* \pm 0.00005^*$ Repeatability
	Brix : $\pm 0.1\%^* \pm 0.02\%^*$ Repeatability
Temperature Control	5.00 to 75.00°C (Peltier based)
Temp Accuracy	Temp : $\pm 0.05^\circ\text{C}$
Resolution	R.I : 0.00001(0.0001) Brix : 0.01%(0.1%) Temp: 0.01° C
Self-Diagnosis Scale	The Instrument should be capable of Detecting Irregularities with the Intensity of Light or Waveforms. Assessment ensures Accurate Measurement on its regular performance.
SCL: User Program Scale	100
Power Supply:	Ac 100 to 240 V
Power consumption	90V
Output	Printer and PC(ViaRs-232C) Computer - USB
Optional	PC Software complaint with 21 CFR, Printer

#### **11.TECHNICAL SPECIFICATIONS FOR ULTRAPURE WATER PURIFICATION SYSTEM**

- Pre filtration System: Three stage pre-treatment system for removal of suspended particles and to take care of F.I. in water with transparent housing. 50 liters R.O. system with 100 liters storage capacity has to be quoted.
- The water purification system shall be comprised of two stage water purification units for the production of Type-I (one unit) & Type-II (one unit) water with pre-treatment, RO, UV, electro deionization technique with following specifications.
- The water purification and water delivery functions of the water purification system will be separated.
- The water purification system and its accessories should be provided with 3 years of warranty with the following terms & conditions. The following parts can be replaced at the time of requirement to the customer during the warranty period.

- (a) Two pre-treatment columns.
- (b) In-built Ultra filtration unit (Additional one number)
- (c) Two additional point-of-use filter to remove Dnase & Rnase.
- (d) Two Conditioning columns
- (e) Two UV lamps (one for type2 & one for type1).
- (f) Two Polishing cartridges.
  - However the unused consumable should be replaced to the customer even after the warranty period.
  - The water purification system should be quoted with 50L or higher volume tank with level sensors.
  - Delivery unit will dispense ultrapure water in two modes easily accessible: variable flow and volumetric dispensing can be used for sophisticated instrumental analysis.
  - The water system delivery unit will incorporate a fully comprehensive, LCD display to provide information 1) on system status 2) routine maintenance and 3) on alarms for troubleshooting in the event of system malfunction.
  - Ultrapure water system built-in resistivity and TOC monitors will be calibrated according to international norms and standards which has to pass USP suitability test.
  - To ensure on-time reordering of the pre-treatment consumables, the system will have automatic warnings.
  - To maintain optimum water purity and preventing deterioration during periods of non-use, the water purification system will be able to recirculate water around internally through a tank/reservoir and the integrated purification technologies.
  - The water purification system will have a built-in pump for recirculation and dispensing of purified water. The recirculation ensures that water quality is optimized any time the user wants to collect water. The delivery pump will dispense pure water at an adequate flow rate.
  - The water purification system must have the ability to provide all necessary information on water purity and system performance parameters. This information should be conveniently visible at a glance on a single screen.

### **Type 2 water**

- |    |                 |                             |
|----|-----------------|-----------------------------|
| 1. | Resistivity     | : > 5 Mega Ohms cm          |
| 2. | TOC             | : < 30 ppb                  |
| 3. | Flow Rate       | : 10 ltrs per hour or above |
| 4. | Dispensing Rate | : 1 L / min                 |
| 5. | Bacteria        | : < 1CFU/ml or better       |

**Type 1 water**

Ultra-purification water system with the specification mentioned below. The system shall be comprised of a single water purification unit with in-built ultra purification unit and point of use filter to remove dnase and rnase with following specifications

1. Resistivity : 18.2 Meg Ohm cm
2. TOC :  $\leq 5$  ppb or better
3. Flow rate : up to 2.0 L/min
4. Bacteria : 0.1 CFU/ ml or better
5. Endotoxins :  $< 0.001$  EU/ml or better
6. Dnase :  $< 4$  pg/ml or better
7. Rnase :  $< 0.01$  ng/ml or better

**12.TECHINICAL SPECIFICATION FOR ION METER**

<b>TECHNICAL SPECIFICATION</b>	
Ph measurement	Range 0.000 to 14.000 Resolution : 0.01 or better Relative Accuracy : $\pm 0.002$ Calibration : 3 or 5 point by specific calibration solution Specificity: up to three point from decimal.
Ion concentration	Range : 0.001- 19990 Resolution : 1 count Accuracy : $\pm 0.5$ .
Temperature Measurement	Range : -10 to + 140° C Resolution : 0.1° C $\pm 0.2$ ° C Accuracy : $\pm 0.1$ ° C
Time recorder	Date and time can be called up and recorded at least 1000 points.
Display	Graphic LCD back lit display and feather touch keys.
Printer / Computer connectivity	Should Have USB port for attachment of printer/Computer
Power Supply	9 Volt Line adapter for 230 $\pm 10$ volts, 50 Hz, AC
Ambient conditions	Equipment shall be suitable for operation in ambient

	temperature i.e 5 - 50° C and relative humidity of 5 - 85%
Ion selective Electrodes	Ion selective electrodes with standards electrolyte solution for measurement of fluoride, Chloride, Cyanide, Nitrate, Ammonia, and Calcium with at least Two Years of shelf lifes.
Spares and consumables	Should be supplied or two years trouble free operation.
<b><u>Electrode (Epoxy body combined solid state) &amp; calibration standards:</u></b>	
Fluoride electrode suitable for range of 0.02 ppm to saturation.	
Chloride electrode suitable for range of 1.80 to 35500 ppm to saturation,	
Nitrate electrode combined liquid membrane, suitable for range of 0.1 to 14000 ppm.	
Ammonia electrode combined high performance gas sensing suitable for range of 0.02 to 17000 ppm.	
Calcium electrode combined liquid membrane, suitable for range of 0.02 to 40000 ppm.	

### **13. TECHNICAL SPECIFICATIONS FOR pH METER**

#### **pH METER(DIGITAL) BENCHTOP**

Microprocessor based bench top pH meter for routine measurement of pH/ mV and temperature with batteries or mains operation and large multifunction digital display, automatic temperature compensation and parallel temperature display, 5 - point calibration system in a set including gel filled pH combined electrode with inbuilt temperature sensor. The equipment should be Water proof, light weight and portable.

#### **Technical Specification:**

Display Range	0.00to14.00pH
Resolution / Accuracy	±0.005pH
Calibration	5 point calibration:
mV Range	-999.9mV;+999.9mV;-1,999...+1.999mV
Resolution/Accuracy	0.1mV/±0.3mV(±999.9mV); 1mV/±1mV(beyond±999.9mV)
Temperature Range	-5°C to105°C
Resolution / Accuracy	0.1°C/±0.1°C
Temp .Compensation	Automatic
Reference Temperature	Selectable between 20&25°C
Data Output	Via display and USB Port

Power Supply	Mains 230±10volts, 50Hz, AC power and 4x1.5 Volt Rechargeable AA batteries
Protection Type	IP67, IP 67
Warranty	3 years on instrument & 1 year on electrodes.
Internal Diagnostics / Self Test Facility	Yes
Splash Proof Housing	Yes
Display	LCD. also display condition of Electrode
Simultaneous Temperature & pH Display	Yes
Membrane Keyboard with Pressure defined points	Yes
Memory Data Sets	800
GLP Supports Functions	Yes
Calibration Protocol	Yes
USB Port	Yes (To attach normal printer & PC)
Limit Value Settings	Yes
Printer Option	Yes (Thermal Printer not accepted)
Sensor Validation	Yes

**Combined electrode specification:**

Measuring range	0.....14 pH
Operating range	0....80
Reference electrolyte	Gel with one year replacement warranty
Membrane shape	Cylindrical
Membrane resistance at 25 Deg C	< 1 gohm
Diaphragm	Ceramics / glass
Shaft material	Noryl/Epoxy
Temperature	Built in NTC

**Accessories:**

- (i) Power cord, operational & service manual (Two copies of each), freely adjustable electrode stand beakers for calibration.
- (ii) NIST traceable pH buffer solution 1.68, 4.01, 7.41, 9.18 (5x100ml of each with certificate).
- (iii) The pH meter should be calibrated from NABL accredited calibration laboratory and calibration certificate will be provided.



#### **14. TECHNICAL SPECIFICATIONS FOR SHAKING WATER BATH**

- 15Liters capacity
- Working temperature range:20°C to 99°C
- Body inner tanks and gable cover made up of high grade corrosive resistant and rust free stainless steel with provision of easy cleaning.
- Adjustable shaking frequency from 20 to 250 oscillations per minute (rpm) or rotations per minute(rpm)
- Micro processor technology for controlling the shaker speed and also to cuts off higher temperature to provide temperature stability.
- Temperature and shaking frequency indicator with external bright LED based multi digital display.
- Alarm for high and low set temperature along with water level indicator.
- Built in electronic timer option should be included.
- Automatic shutdown function.
- Water proof soft keypad for easy entry of temperature and shaking speed range.
- Mains switch and cord should be water resistant.
- Provision of drain tube for emptying of eater bath.
- Single phase current option at 220 volts.
- Energy efficient Certification compliance required.
- Users list must be provided.

#### **15. TECHNICAL SPECIFICATIONS FOR CONSTANT TEMPERATURE BATH**

Capacity: Minimum10Ltrs.

Temperature range:-10°C to +60°C

Temp .accuracy: 10°C

Discharge capacity: 4Ltrs/min.

Outer body made of MS and epoxy powder coating.

Inner chamber made of SS .Digital Temp. controller.

Thermostatic safety cut out system

Input voltage : 220 V AC

## **16. TECHNICAL SPECIFICATION FOR CONSTANT TEMPERATURE BATH (CIRCULATING)**

A Refrigerated /Heating Circulating Bath for conducting controlled melting/ solidification experiments on salt-water solution is needed. The application of refrigerated / heating circulating bath is to circulate the coolant through a pre-designed heat exchanger mounted on the top of rectangular cavity, having a typical size of 10 cm x 10cm x 1cm filled with salt-water solution. The top of the rectangular cavity needs: to be maintained at constant temperature in the range of -35°C to + 150°C.

### **The technical specifications of the Refrigerated/Heating circulating bath:**

1. Temperature range : -35° C to + 150° C. the experiments shall be planned at - 35° C and hence system must be capable of working at minimum temperature limit. Minimum temperature range lower than -35° C are welcome. Maximum temperature range ~ +150° C.
2. Absolute Temperature Calibration(ATC)at least 3-point calibration
3. A Proportional – Integral- Derivative (PID)1 temperature control temperature stability should be atleast  $\pm 0.1^{\circ}\text{C}$ .
4. Heat Capacity: at least 2 kW.
5. Cooling capacity (bath fluid Ethanol)should be at least 0.4kW at 20°C at least 0.35kW at 0°C and at least 0.15kW at -20°C.
6. Capable of working with flammable coolant such as Ethanol.
7. Coolant Filling Volume: ~8litre or more.
8. Pump Capacity : Flow rate~15litre/ min,Pressure~0.35 bar.
9. Pump capacity electronically adjustable
10. Low noise level
11. Electronic countdown time.
12. Having early warning system for low liquid level and high/ low temperature.
13. Cables and power supply should conform the Indian standard.

## **17. TECHNICAL SPECIFICATIONS FOR ANALYTICAL BALANCE (four digits)**

Self calibration Capacity: 0.01mg-220gm

Pan size: 80 mm

Linearity :  $\pm 0.2$  mg

Repeatability standard deviation:  $>/=0.1$  mg

Response time : 12/3 sec

Sensitivity against temperature change Specific gravity measurement software

% display function Unit conversion Calibration report ISO/GLP Compliance for printing the value (weights, calibration with date & time).

### **18. TECHNICAL SPECIFICATIONS FOR ANALYTICAL BALANCE (five digits)**

1. Readability of 0.00001 g. (0.01 mg).
2. Compact design with sturdy chemical resistant body.
3. Weighing pan Ø at least 90 mm or equivalent.
4. Calibration of a frequently used weighing range using external weights.
5. Digital panel with back lit display.
6. Overload protection feature.
7. calibration certificate with F1 / E2 class calibration weights traceable to NPL should be provided with the balance.
8. The supplier should have the capability to provide calibration of the balance once in six months with NPL certified weights. Full details of this service should be provided.
9. One spare power adapter should be provided
10. Full operation manual should be provided.
11. User list for the quoted model in India with full contact information should be provided.
12. Full warranty information should be provided.
13. A compliance statement with each point in the specification should compulsorily accompany the quotation, without which the quotation will be considered incomplete.
14. Internal adjustment weight for precise result.
15. Maximum Capacity at least 200g.
16. Capability of displaying weighing result in different units.
17. Features like Taring and % weighing feature should be available.
18. Repeatability at least 0.03 mg.
19. High grade, chemical resistant housing.
20. Back lit display.
21. Standard RS232c interface to connect to external PC.
22. Hook for weighing below the balance
23. Glass draft shield with sliding doors, with free access from right, left and Above.

## **19. TECHNICAL SPECIFICATIONS FOR KARL FISCHER TITRATOR**

Karl fischer coulometric titrator

Karl fischer coulometric for the determination of water content in insulating oils, hydrocarbons, crude oil, biodiesel etc., as per ASTM standards.

The equipments should be micro processor controlled fully automatic compact instruments . The instruments should have coulometric cell without diaphragm.

Stirrer suitable magnetic stirrer with digital display. The stirrer should have compatible speed .

Measuring method : karl fischer coulometric titration method measuring the water content.

Measuring range :10  $\mu\text{g}$  – 300 mg of water content should be detected.

Sensitivity of the instruments: about  $\pm 0.1 \mu\text{g}$ .

Display resolution: High display resolution.

End point delay: end pint delay should be adjustable and should have a long range. End point indication should be visible as well as audible by giving electronic beep.

Precision: In the range of 10-100  $\mu\text{g} \pm 3 \mu\text{g}$  ; 100  $\mu\text{g}$  -1 mg  $\pm 5 \mu\text{g}$  ; above 1 mg  $\pm 0.5\%$

Titration speed also should be high. Instruments should have facility to store at least 100 user methods.

Automatic drift compensation: for highest accuracy, no matter how much sealed a titration vessel then also some moisture find its way in and it has to be taken care of the intelligent microcontroller should have the capability to correct automatically after each titration is performed.

## **20. TECHNICAL SPECIFICATION FOR MUFFLE FURNACE**

Furnace has muffle wound externally with heating unit up to the max temperature of 1000° C and of the specification are as follows:

Chamber Size	450x 230 x 230 mm
Material	Steel in and outside ceramic fiber insulation
Door	Opening & Closing with heat proof handled Exhaust fume exit provision.
Temp. range	300 to 1000° C
Temp. Setting	Thermostatically controlled up to 1000° C at 1000° C $\pm 10^\circ$ C accuracy single set point control rise time to (1000°C) less than 1 hour embedded heating elements on three sides.

Temp. Reading	Read set temperature on indicating pyrometers calibrated in 20°C measurements in the entire range displayed digitally.
power	230± 10 V/50Hz AC
Watt	3000
Features	Highly insulated Pilot lamp for the thermostat operation Drop down door with high quality hinges (to serve as shelf during (un) loading samples) Safety inter lock switch for open door.

## 21. TECHNICAL SPECIFICATION FOR FREEZE DRYER

Sl. No	Product Name & Specification
1	<p>Laboratory Bench Top Freeze Dryer This freeze dryer should be an energy efficient microprocessor controlled , freely programmable and compact user friendly system. It should be able to handled routine environmental samples from diverse matrices including samples of corrosive nature. It should be CE complaint, <u>HCFC/CFC</u>- free, and should meet environmental and safety regulation of India.</p> <p><b><u>Technical Specification</u></b></p> <ul style="list-style-type: none"> <li>• ice holding capacity before defrost should be 2.5 kg (or L) higher.</li> <li>• Sublimation rate should be 2 kgs (or L) of water per 24 hours or higher.</li> <li>• Condensation / collector temperature: - 50 ° C or lower.</li> <li>• Drain valve for disposal of defrosted material.</li> <li>• Collector should be made with stainless steel coil and be PTFE coated inside the chamber to trap acidic moisture.</li> <li>• Power supply : AC 220-240 V, 50/60 Hz.</li> <li>• A display for setup and operating parameters, such as ice condenser temperature, vacuum level and alarm messages, should be provided.</li> <li>• It should have alarms for abnormal operation</li> <li>• Vacuum break and vacuum control valves should be provided to prevent oil back streaming.</li> <li>• Should contain a moisture sensor to protect vacuum pump.</li> <li>• Refrigeration system should be HCFC and CFC free with 1/3 hp.</li> </ul>

**SECTION - VII LIST OF DELIVERY PLACES**

## **DELIVERY PLACES**

**Schedule A - Research and Development Wing attached to Indian Medicine and Homoeopathy Department, Chennai - 600106. Land Mark: Near Anna Arch.**

## **DELIVERY PERIOD**

**90 days from the date of receipt of the purchase order.**

**SECTION VIII QUALIFICATION CRITERIA**



## **SECTION VIII : QUALIFICATION CRITERIA**

(Referred to in Clause 11.2 of ITB)

For determining the lowest-evaluated bid, the Purchaser shall carry out the qualification of the Bidder in accordance with ITB Clause 11.2, using only the requirements specified. Requirements not included in the text below shall not be used in the evaluation of the Bidder's qualifications.

The Bidder shall furnish documentary evidence to demonstrate that it meets the following experience requirement(s):

### **1. Manufacturer Bidders**

- (i). The bidder must have manufactured and supplied satisfactorily the similar model quoted in each schedule of the Schedule of Requirements either directly or through of any other authorized dealer to the extent of at least 1 No. under "Section - V, Schedule of Requirements" in any one of the last five years of which minimum 1 No. should have been supplied to Indian Institution and should be in use satisfactorily with no adverse report for at least one year preceding the date of bid opening.
- (ii). The Bidder should furnish a brief write-up, backed with adequate data, explaining his available capacity and experience (both technical and commercial) for the manufacture and supply of the required equipment within the specified time of completion after meeting all their current commitments.
- (iii). the bidder should clearly confirm that all the facilities exist in his factory for inspection and testing and these will be made available to the purchaser or his representative for inspection.

### **2. Non- Manufacturer Bidders**

In the case of a Bidder offering to supply Goods under the Contract that the Bidder does not manufacture or otherwise produce, the Bidder should be duly authorized by the manufacturer of the Goods who meets the criteria under (1) above (all supporting documents/information as asked above for manufacturer shall be submitted with the bid) and

- a). The manufacturer furnishes a legally enforceable authorization in the prescribed Form [Section XIII] assuring full guarantee and warranty obligations as per GCC and SCC for the goods offered; and

- b). The bidder, as authorized by the manufacturer, must have supplied and provided after sales service to the extent of at least 1 No. of the quantities of similar model in the Schedule of Requirements in any one of the last five (5) years to Indian Institution, which must be in satisfactory operation at least for one year on the date of bid opening.

### 3. Common to Both Manufacturer and Bidder

- (i). The information on past supplies and satisfactory performance should be given in the Performa given under Section-XII.
- (ii). Documentary evidence (end users certificate) in support of the satisfactory operation of the goods as specified above shall invariably furnish.
- (iii). Data to support that the manufacturer has the financial and production capacity to perform the contract and complete the supplies within the stipulated delivery period shall be furnished. For the non-manufacturer bidder data to support that he has the financial capacity to perform the contract and complete the supplies within the stipulated delivery period shall be furnished. Reports on financial standing shall be in the form of profit and loss statements, balance sheets and auditor's report for the past three years, bankers certificate, etc.,
- a). The bidder should have a manufacturing capacity of at least 12 nos. in the Schedule of Requirements of similar capacity for instruments/equipments/items per annum certified by licensing authority/ chartered accountant.
- b). The annual sales turnover for the bidder for the following Schedule of Requirements in any one of the last three years (2014 - 15 to 2016 - 17), should be at least the minimum of value as follows and it should be certified by the chartered accountants.

Sl.No.	Description	Value
1.	Schedule A: Machineries and Equipments to Research & Development Wing attached to Indian Medicine and Homoeopathy Department, Chennai - 106.	100% of the total value

- c) The bidder should have cash / credit limit of at least 50% of the quoted value for the Schedule of Requirements with their bankers exclusively for this contract and a certificate for the above shall be furnished by the bankers.

- (iv). Further, the manufacturer should be in continuous business of manufacturing / supplying and after sale services of products similar to that specified in the 'Schedule of requirement' during the last 5 years prior to bid opening. In case of non- manufacturer bidders, this condition should be satisfied by the manufacturer of the product.
- (v). The legal status, place of registration and principal place of business of the company or firm or partnership, etc.

Notwithstanding anything stated above, the purchaser reserves the right to assess the bidder's capabilities and capacity to execute the contract satisfactorily before deciding on award. Even though the bidders meet the above qualifying criteria, they are subject to be disqualified, if they have made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements and/or record of poor performance such as, not properly completing the contract, inordinate delays in completion, litigation history, or

**4. For Dealers and Agencies (for the following schedule of items only)**

- a. The bidder must have registered with Sales Tax Department
- b. The annual sales turnover for these bidder for the following Schedule of Requirements in any one of the last three years (2014-15 to 2016 - 17), should be at least the minimum of value as follows and it should be certified by the chartered accountants.

Sl.No.	Description	Value
1.	Schedule A: Machineries and Equipments to Research and Development Wing attached to Indian Medicine and Homoeopathy Department, Chennai - 106.	Rs. 2,58,77,000/-

**SECTION IX: BID FORM AND PRICE SCHEDULES**

Date: ..... 2017

Contract No.....

To:

Sir,

Having examined the Bidding Documents including Addenda Nos....., the receipt of which is hereby duly acknowledged, we, the undersigned, offer to supply and deliver..... (Description of Goods and Services) in conformity with the said Bidding Documents for the sum of..... (Total Bid amount in Words and Figures) or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this bid.

We undertake, if our bid is accepted, to deliver the goods in accordance with the delivery schedule specified in the Schedule of Requirements.

If our bid is accepted we will obtain the bank guarantee to a sum of value equivalent to 5% of the Contract Price for the due and faithful performance of the Contract, in the form prescribed by the Purchaser.

We agree to abide by this bid for a period of .....(Number) days from the date fixed for bid opening under Clause 20 of the Instruction to Bidders and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal contract is prepared and executed, this bid, together with your written acceptance thereof and your notification of award shall constitute a binding Contract between us.

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

Dated this..... Day of ..... 2017

Signature: .....

(In the Capacity of).....

Duly authorized to sign bid for and on behalf of

.....



15	Flash evaporator	1									
16	Photographic microscope	2									
17	Laminar bench	2									
18	Glass double distillation unit	2									

**Note:**

- In case of any discrepancy between unit price and total price, the unit price shall only be taken into account.
- This price schedule should be placed in separate sealed cover and marked as "cover B"
- If there is a discrepancy between the prices quoted in words and in figures, lower of the two shall be considered.

Place:  
 .....

Signature of Bidder

Date:

Name.....  
 Business Address .....







Note:

- In case of any discrepancy between unit price and total price, the unit price shall only be taken into account.
- This price schedule should be placed in separate sealed cover and marked as "cover B"
- If there is a discrepancy between the prices quoted in words and in figures, lower of the two shall be considered.

Place:  
.....

Signature of Bidder

Date:

Name.....  
Business Address .....

**SECTION X: CONTRACT FORM**

**SECTION X : CONTRACT FORM**

THIS AGREEMENT made the ..... Day of ....., **2017** between..... (Name and Address of Purchaser) represented by the Chairman Managing Director..... (Hereinafter “the Purchaser”) of one part and..... (Name and Address of Supplier)..... (Hereinafter “the Supplier”) represented by ..... (Name of the Authorized Signatory and Designation), Aged ..... Years, residing at ..... (Full Residential Address of the Signatory) of the other part: WHEREAS the Purchaser is desirous that certain Goods and ancillary services should be provided by the Supplier, viz., ..... (Brief

Description of Goods and Services) and ..... has accepted a bid by the Supplier for the supply of those goods and services in the sum of..... (Contract Price in Words and Figures) (hereinafter “the Contract Price”).

**NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:**

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall be deemed to form and be read and constructed as part of this Agreement, viz.:
  - (a). the Bid Form and Price Schedule submitted by the Bidder;
  - (b). the Schedule of Requirements;
  - (c). the Technical Specifications;
  - (d). the General Conditions of Contract;
  - (e). the Special Conditions of Contract; and
  - (f). the Purchaser’s Notification of Award
3. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

BRIEF PARTICULARS OF THE GOODS AND SERVICES WHICH SHALL BE SUPPORTED / PROVIDED BY THE SUPPLIER ARE:

Sl. No.	Brief description of goods	Quantity to be supplied	Unit Price	Total Amount (3X4)	Sales Tax & other Taxes payable
1	2	3	4	5	6

Total Value: 5 + 6

**Delivery Schedule:**

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed, Sealed and Delivered by the

Said..... (For the Purchaser)

In the presence of.....

Signed, Sealed and Delivered by the said..... (For the Supplier)

(Signature, Name, Designation and

Address with Office seal)

in the presence of .....

1).

(Signature, Name and Address of witness)

2).

(Signature, Name and Address of witness)

**SECTION XI: PERFORMANCE SECURITY FORM**

**SECTION XI PERFORMANCE SECURITY FORM**

To: \_\_\_\_\_ (Name of Purchaser)

WHEREAS..... (Name of the Supplier) herein called "the Supplier" has undertaken, in pursuance of Contract No..... dated ... to supply..... (Description of Goods and Services) hereinafter called "the Contract".

AND WHERE AS it has been stipulated by you in the said Contract that the Supplier shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with the Supplier's performance obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the Supplier a Guarantee

(Amount of the Guarantee in Words and Figures) and we undertake to pay you, upon your first written demand declaring the Supplier to be in default under the Contract and without cavil or argument, any sum or sums within the limit of ..... (Amount of Guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the..... Day of ..... 20..... ( 5 YEARS from the date of delivery)

Signature and Seal of Guarantors

.....

.....

.....

Date ..... 2017.....

Address.....

.....

.....

**SECTION XII : PERFORMANCE STATEMENT**



(Please see Clause 11.2(b) (ii) of Instructions to Bidders)

**SECTION XII**

Performa for Performance Statement (for a period of last five years)

**Bid No.**

**Name of the Firm**

Order placed by (Full address of purchaser)	Order No. & Date	Description and Quantity of ordered equipment	Value of Order	Date of Completion of delivery	Remarks indicating reason for late delivery, if any	Has the equipment been Satisfactorily functioning ? (Attach a certificate from the purchaser / consignee)
				As per Actual Contract		

---

Signature and Seal of the Bidder.....

.....

**SECTION XIII: MANUFACTURER'S AUTHORISATION FORM**

**SECTION XIII**

(Please see Clause 11.2(a) of Instructions to Bidders)

**MANUFACTURER'S AUTHORISATION FORM**

No..... Dated.....

To

.....

.....

.....

Dear Sir,

IFB No. \_\_\_\_\_

We \_\_\_\_\_ who are established and reputable manufacturers of \_\_\_\_\_ having factories at \_\_\_\_\_ and \_\_\_\_\_ do hereby authorize M/s. \_\_\_\_\_ (Name and address of Representative) to submit a bid, and subsequently negotiate and sign the contract with you against the above IFB NO.

No company or firm or individual other than M/s. \_\_\_\_\_ are authorized to bid, negotiate and conclude the contract in regard to this business against this specific IFB.

We hereby extend our full guarantee and warranty as per Clause 14 of the General Conditions of Contract for the goods offered for supply against this invitation for bid by the above firm.

Your's faithfully,

(Name)

For and on behalf of M/s. \_\_\_\_\_

(Name of manufacturers)

Note: This letter of authority should be on the letterhead of the manufacturing concern and should be signed by a person competent and having the power of attorney to bind the manufacturer.

**SECTION XIV: AFFIDAVIT FORM**

**SECTION XIV: AFFIDAVIT**

(In Rs.10 NJ Stamp Paper)

1) I \_\_\_\_\_ S/o. \_\_\_\_\_ residing at No. \_\_\_\_\_ proprietor / partner / Managing Director of \_\_\_\_\_ (Proprietary concern / Partnership firm / Company) carrying on business at No. \_\_\_\_\_ do hereby solemnly affirm and sincerely state as follows:-

2) I state that our concern / company participated in the tender Ref. No. \_\_\_\_\_ For the supply of \_\_\_\_\_ with Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Ltd.,

3) Our concern / company had supplied \_\_\_\_\_ nos. of similar equipment for the Govt. Departments / Institutions detailed below and the same is considered by us to meet the qualification criteria prescribed in the tender above.

SI. No Date of Invoice Name and address of Govt. Departments / Institution supplied

Date of Installation Date of end user performance certificate

4) I satisfy that the equipment supplied to the above Govt. Departments // Institutions are working well and being maintained by us. The complaints received from the Govt. Departments / / Institutions are attended to on time as per the Annual Maintenance Contract entered between us.

5) The performance certificate, invoice copy and payment proof are attached for the above supply Solemnly affirm at \_\_\_\_\_ Signed before me Chennai on this \_\_\_\_\_ Day signed in my presents  
2017 and

(Notary Public)

**SECTION XV: CHECK LIST**

**SECTION XV: CHECK LIST**

Sl. No	Particulars	Enclosed Yes / No.	Page No.	
			From	To
1.	<b>Bid Security.</b>			
2.	For Importers Photocopy of License renewed upto date			
3.	Documentary evidence of constitution of firm such as Memorandum of Articles, Partnership Deed, etc., with details of Name, Address, Tel. No., Fax No., E-mail Address of firm and the Chairman & Managing Director / Partner/Proprietor			
4.	Authorisation of senior responsible officer of the Company to transact business.			
5.	Annual turnover statement for last three years certified by the Auditor. 2014-15, 2015 - 16 and 2016 - 17.			
6.	Copies of Balance Sheet and Profit & Loss Account for last three years certified by the Auditors. 2014 -15, 2015 - 16 and 2016 - 17			
7.	Sales Tax clearance Certificate as on 31/03/2017			
8.	Notarised statement of the Installed manufacturing capacity of the Items quoted			
9.	Qualification Criteria - Section VIII			
10.	Performance Statement - Section XII			
11.	Manufacturer's Authorization Form - Section XIII			
12.	Technical literature and other documents in support of the goods / service Centres in Tamil Nadu.			
13.	Any deviations			
14.	<b>List of items quoted (without prices)</b>			



**TAMILNADU MEDICAL PLANT FARMS AND HERBAL MEDICINE  
CORPORATION LTD.**

**(A GOVERNMENT OF TAMILNADU UNDERTAKING)**

**ANNA HOSPITAL CAMPUS, ARUMBAKKAM, CHENNAI - 600 106.**

**Regd. Office** : ANNA HOSPITAL CAMPUS,  
ARUMBAKKAM,  
CHENNAI- 600 106

**Telephone** : 044-26216696

**Fax No** : 044-26221484

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**CIN** : U93090TN1983SGC010336