Request for Bids
Goods

(Two-Envelope Bidding Process)

Contract Title: PROCUREMENT OF EQUIPMENTS FOR ESTABLISHMENT OF QUALITY CONTROL AND ANALYTICAL LABORATORY

RFB Reference No.: MBDA/BRDC/778/2021-22/586

1. Meghalaya Basin Development Authority (MBDA) invites sealed Bids from eligible Bidders for **Procurement Of Equipments For Establishment Of Quality Control And Analytical Laboratory***" as per following details:*

Bid Reference #	Lots	Total no. (in Nos.)	EMD (INR)
RFB: MBDA/BRDC/778/2021-22/586	Procurement Of Equipments For Establishment Of Quality Control And Analytical Laboratory	181	16,57,000/-

2. Bidding will be conducted through Open Tendering using a Request for Bids (RFB) in two envelopes (technical and financial bids) and is open to all eligible Bidders.

3. Interested eligible Bidders may obtain further information and inspect the bidding documents during office hours 1100 hrs. to 1600 hrs. at the office of the Meghalaya Basin Development Authority, Meghalaya, Shillong, India.

4. A complete set of bidding documents is available on the website: www.mbda.gov.in and can be freely downloaded by interested bidders. *"The bidders, who have downloaded the bid documents, shall be solely responsible for checking the website for any addendum issued subsequently to the bid document and take into consideration while preparing and submitting the bids. Bidders to note that bid document will not be sent by mail or courier by MBDA and also no fees to be paid by the bidders to download the bid document.*

5. Bids must be delivered to the address below on or before ***March 31, 2022 (1600 Hrs. IST)***. Electronic Bidding will notbe permitted. Late Bids will be rejected. The outer Bid envelopes marked "ORIGINAL BID", and the inner envelopes marked "TECHNICAL PART" will be publicly opened in the presence of the Bidders' designated representatives and anyone who chooses to attend, at the address below. All envelopes marked "SECOND ENVELOPE: FINANCIAL PART" shall remain unopened and will be held in safe custody of the Purchaser until the second public opening.

6. All Bids must be accompanied by a *"Bid Security,"* of INR 16,57,000/- (*Indian Rupees Sixteen Lakhs and Fifty Seven Thousand only.*

7. In the event of the date specified for bid receipt and opening being declared as a closed holid*a*y for the purchaser's office, the due date for submission of bids and opening of bids will be the following working day at the appointed times.

Important Dates

(a) Date of Issue of bidding document : March 10, 2022

(b) Date of Pre-bid Meeting : March 17, 2022 at 1100 Hrs.
(Bidders interested to participate in the pre-bid meeting may please send a request to mbdaprocurement@gmail.com for sending a link to them)

(c) Last date and time for Submission and receipt of bids :March 31, 2022at 1600 hrs.

(d) Date and Time opening of technical bids : March 31, 2022at 1630 hrs.

(e) Place of opening of bids: **Meghalaya Basin Development Authority**
O/o Meghalaya Basin Development Authority,
C/o Meghalaya State Housing Financing Cooperative Society, Upper Nongrim Hills,
Shillong– 793003, Meghalaya

(f)Address for communication: **Meghalaya Basin Development Authority**
O/o Meghalaya Basin Development Authority,
C/o Meghalaya State Housing Financing Cooperative Society, Upper Nongrim Hills,
Shillong– 793003, Meghalaya
Telephone: 0364 - 2522043
E-mail: mbdaprocurement@gmail.com
Website: www.mbda.gov.in

Seal of Office & Address

Executive Director,MBMA
Meghalaya Basin Management Agency,
C/o Meghalaya State Housing Financing & Cooperative Society,
Upper Nongrim Hills,
Meghalaya, Shillong - 793003
Telephone: 0364-2522043
E-mail: mbdaprocurement@gmail.com
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Request for Bids
Goods
(Two-Envelope Bidding Process)

PROCUREMENT OFEQUIPMENTS FOR ESTABLISHMENT OF QUALITY CONTROL AND ANALYTICAL LABORATORY

RFB No: MBDA/BRDC/778/2021-22/586
Issued on: *March 10, 2022*

Standard Procurement Document

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PART 1 – Bidding Procedures

Section I - Instructions to Bidders

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Section I - Instructions to Bidders

A. General

1. **Scope of Bid**

1.1 In connection with the Specific Procurement Notice, Request for Bids (RFB), specified **in the Bid Data Sheet (BDS),** the Purchaser, as specified **in the BDS,** issues this bidding document for the supply of Goods and, if applicable, any Related Services incidental thereto, as specified in Section VII, Schedule of Requirements. The name, identification and number of lots (contracts) of this RFB are specified **in the BDS.**

1.2 Throughout this bidding document:

(a) the term "in writing" means communicated in written form (e.g.by mail, e-mail, including, if **specified in the BDS**, distributed or received through the electronic-procurement system used by the Purchaser), with proof of receipt;

(b) if the context so requires, "singular" means "plural" and vice versa; and

(c) "Day" means calendar day, unless otherwise specified as "Business Day". A Business Day is any day that is an official working day of the Purchaser. It excludes the Purchaser's official public holidays.

2. Source of Funds

2.1 MBMA

2.2 NA

3. Not Used

3.1 NA

4. Eligible Bidders

4.1 A Bidder may be a firm that is a private entity, a state-owned enterprise or institution (subject to ITB 4.6), or any combination of such entities in the form of a joint venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the

Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the Bidding process and, in the event the JV is awarded the Contract, during contract execution. Unless specified **in the BDS**, there is no limit on the number of members in a JV.

4.2 A Bidder shall not have a conflict of interest. Any Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest for the purpose of this Bidding process, if the Bidder:

(a) directly or indirectly controls, is controlled by or is under common control with another Bidder; or

(b) receives or has received any direct or indirect subsidy from another Bidder; or

(c) has the same legal representative as another Bidder; or

(d) has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the Bid of another Bidder, or influence the decisions of the Purchaser regarding this Bidding process; or

(e) or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the Bid; or

(f) or any of its affiliates has been hired (or is proposed to be hired) by the Purchaser or Borrower for the Contract implementation; or

(g) would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the project specified in the BDS reference ITB 2.1 (the name of the project), that it provided or were provided by any affiliate that directly or indirectly controls, is controlled by, or is under

common control with that firm; or

(h) has a close business or family relationship with a professional staff of the Borrower (or of the project implementing agency, or of a recipient of a part of the loan) who: (i) are directly or indirectly involved in the preparation of the bidding document or specifications of the Contract, and/or the Bid evaluation process of such Contract; or (ii) would be involved in the implementation or supervision of such Contract.

4.3 A firm that is a Bidder (either individually or as a JV member) shall not participate in more than one Bid, except for permitted alternative Bids. This includes participation as a subcontractor. Such participation shall result in the disqualification of all Bids in which the firm is involved. A firm that is not a Bidder or a JV member, may participate as a subcontractor in more than one Bid.

4.4 A Bidder may have the nationality of any country, subject to the restrictions pursuant to ITB 4.8. A Bidder shall be deemed to have the nationality of a country if the Bidder is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed subcontractors or subconsultants for any part of the Contract including related Services.

4.5 NA.

4.6 Bidders that are state-owned enterprises or institutions in the Purchaser's Country may be eligible to compete and be awarded a Contract(s) only if they can establish, that they (i) are legally and financially autonomous (ii) operate under commercial law, and (iii) are not under supervision of the Purchaser.

4.7 A Bidder shall not be under suspension from Bidding by the Purchaser as the result of the operation of a Bid/Proposal–Securing Declaration.

(a) NA.

4.8 A Bidder shall provide such documentary evidence of eligibility satisfactory to the Purchaser, as the Purchaser shall reasonably request.

(a) NA.

5. Eligible Goods and Related Services

5.1 NA

5.2 For purposes of this ITB, the term "goods" includes commodities, raw material, machinery, equipment, and industrial plants; and "related services" includes services such as insurance, installation, training, and initial maintenance.

5.3 The term "origin" means the country where the goods have been mined, grown, cultivated, produced, manufactured or processed; or, through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its components.

B. Contents of Request for Bids Document

6. Sections of Bidding Document

6.1 The bidding document consist of Parts 1, 2, and 3, which include all the sections indicated below, and should be read in conjunction with any addenda issued in accordance with ITB 8.

PART 1 Bidding Procedures

- Section I - Instructions to Bidders (ITB)
- Section II - Bidding Data Sheet (BDS)
- Section III - Evaluation and Qualification Criteria
- Section IV - Bidding Forms
- Section V- Eligible Countries

- Section VI –Not Used

PART 2 Supply Requirements

- Section VII - Schedule of Requirements

PART 3 Contract

- Section VIII - General Conditions of Contract
- Section IX - Special Conditions of Contract
- Section X - Contract Forms

6.2 The Specific Procurement Notice - Request for Bids (RFB) issued by the Purchaser is not part of this bidding document.

6.3 Unless obtained directly from the Purchaser, the Purchaser is not responsible for the completeness of the document, responses to requests for clarification, the Minutes of the pre-Bid meeting (if any), or addenda to the bidding document in accordance with ITB 8. In case of any contradiction, documents obtained directly from the Purchaser shall prevail.

6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding document and to furnish with its Bid all information or documentation as is required by the bidding document.

7. Clarification of the Bidding Document

7.1 A Bidder requiring any clarification of the bidding document shall contact the Purchaser in writing at the Purchaser's address specified **in theBDS**. The Purchaser will respond in writing to any request for clarification, provided that such request is received prior to the deadline for submission of Bids within a period specified **in the BDS.** The Purchaser shall forward copies of its response to all Bidders who have acquired the bidding documentin accordance with ITB 6.3, including a description of the inquiry but without identifying its source. If so specified **in the BDS**, the Purchaser shall also promptly publish its response at the web page identified **in the BDS**. Should the clarification result in changes to the essential elements of the bidding document, the Purchaser shall amend the bidding document

following the procedure under ITB 8 and ITB 22.2.

8. Amendment of Bidding Document

8.1 At any time prior to the deadline for submission of Bids, the Purchaser may amend the bidding document by issuing addenda.

8.2 Any addendum issued shall be part of the bidding document and shall be communicated in writing to all who have obtained the bidding document from the Purchaser in accordance with ITB 6.3. The Purchaser shall also promptly publish the addendum on the Purchaser's web page in accordance with ITB 7.1.

8.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Purchaser may, at its discretion, extend the deadline for the submission of Bids, pursuant to ITB 22.2.

C. Preparation of Bids

9. Cost of Bidding

9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Purchaser shall not be responsible or liable for those costs, regardless of the conduct or outcome of the Bidding process.

10. Language of Bid

10.1 The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Purchaser, shall be written in the language specified **in the BDS.** Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages into the language specified **in theBDS,** in which case, for purposes of interpretation of the Bid, such translation shall govern.

11. Documents comprising Bid

11.1 The Bid shall comprise two Parts, namely the Technical Part and the Financial Part. These two Parts shall be submitted simultaneously in two separate sealed envelopes (two-envelope Bidding process). One envelope shall contain only information relating to the Technical Part and the other, only information relating to the Financial

Part. These two envelopes shall be enclosed in a separate sealed outer envelope marked "ORIGINAL BID".

11.2 The **Technical Part** shall contain the following:

(a) **Letter of Bid - Technical Part:** prepared in accordance with ITB 12;

(b) **Bid Security** or **Bid-Securing Declaration**: in accordance with ITB 19.1;

(c) **Alternative Bid - Technical Part**: if permissible in accordance with ITB 13, the Technical Part of any Alternative Bid;

(d) **Authorization**: written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.3;

(e) **Bidder's Eligibility**: documentary evidence in accordance with ITB 17 establishing the Bidder's eligibility to Bid;

(f) **Qualifications**: documentary evidence in accordance with ITB 17 establishing the Bidder's qualifications to perform the Contract if its Bid is accepted;

(g) **Eligibility of Goods and Related Services**: documentary evidence in accordance with ITB 16, establishing the eligibility of the Goods and Related Services to be supplied by the Bidder;

(h) **Conformity**: documentary evidence in accordance with ITB 16, that the Goods and Related Services conform to the bidding document;

(i) any other document **required in the BDS.**

11.3 The **Financial Part** envelope shall contain the following:

(a) **Letter of Bid – Financial Part:** prepared in accordance with ITB 12 and ITB 14;

(b) **Price Schedules**: completed prepared in accordance with ITB 12 and ITB 14;

(c) **Alternative Bid - Financial Part;** if permissible in accordance with ITB 13, the Financial Part of

any Alternative Bid;

(d) any other document **required in the BDS.**

11.4 The Technical Part shall not include any financial information related to the Bid price. Where material financial information related to the Bid price is contained in the Technical Part the Bid shall be declared non-responsive.

11.5 In addition to the requirements under ITB 11.1, Bids submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful Bid shall be signed by all members and submitted with the Bid, together with a copy of the proposed Agreement.

11.6 The Bidder shall furnish in the Letter of Bid information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Bid.

12. Letters of Bid

12.1. The Bidder shall prepare the Letter of Bid – Technical Part, and Letter of Bid – Financial Part using the relevant forms furnished in Section IV, Bidding Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITB 20.3. All blank spaces shall be filled in with the information requested.

13. Alternative Bids

13.1. Unless otherwise **specified in theBDS,** Alternative Bids shall not be considered.

14. Bid prices and Discounts

14.1 The prices and discounts quoted by the Bidder in the Letter of Bid - Financial Part and in the Price Schedules shall conform to the requirements specified below.

14.2 All lots (contracts) and items must be listed and priced separately in the Price Schedules.

14.3 The price to be quoted in the Letter of Bid - Financial Part, in accordance with ITB 12.1 shall be the total price of the Bid, excluding any discounts offered.

14.4 The Bidder shall quote any discounts and indicate the methodology for their application in

the Letter of Bid - Financial Part, in accordance with ITB 12.1.

14.5 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account, unless otherwise specified **in the BDS.** A Bid submitted with an adjustable price quotation shall be treated as nonresponsive and shall be rejected, pursuant to ITB 31. However, if in accordance with the BDS, prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract, a Bid submitted with a fixed price quotation shall not be rejected, but the price adjustment shall be treated as zero.

14.6 If so specified in ITB 1.1, Bids are being invited for individual lots (contracts) or for any combination of lots (packages). Unless otherwise specified **in the BDS,** prices quoted shall correspond to 100% of the items specified for each lot and to 100% of the quantities specified for each item of a lot. Bidders wishing to offer discounts for the award of more than one Contract shall specify in their Bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITB 14.4 provided the Bids for all lots (contracts) are opened at the same time.

14.7 The terms EXW, CIP, and other similar terms shall be governed by the rules prescribed in the current edition of Incoterms, published by the International Chamber of Commerce, as specified **in theBDS.**

14.8 Prices shall be quoted as specified in each Price Schedule included in Section IV, Bidding Forms. The disaggregation of price components is required solely for the purpose of facilitating the comparison of Bids by the Purchaser. This shall not in any way limit the Purchaser's right to contract on any of the terms offered. In quoting prices, the Bidder shall be free to use transportation through carriers registered in any eligible country, in accordance with Section V, Eligible Countries. Similarly, the Bidder may

obtain insurance services from any eligible country in accordance with Section V, Eligible Countries. Prices shall be entered in the following manner:

(a) For Goods manufactured in the Purchaser's Country:

(i) the price of the Goods quoted EXW (ex-works, ex-factory, ex warehouse, ex showroom, or off-the-shelf, as applicable), including all customs duties and sales and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of the Goods;

(ii) any Purchaser's Country sales tax and other taxes which will be payable on the Goods if the Contract is awarded to the Bidder; and

(iii) the price for inland transportation, insurance, and other local services required to convey the Goods to their final destination (Project Site) specified **in theBDS.**

(b) For Goods manufactured outside the Purchaser's Country, to be imported:

(i) the price of the Goods, quoted CIP named place of destination, in the Purchaser's Country, as specified **in theBDS;**

(ii) the price for inland transportation, insurance, and other local services required to convey the Goods from the named place of destination to their final destination (Project Site) specified **in theBDS;**

(c) For Goods manufactured outside the Purchaser's Country, already imported:

(i) the price of the Goods, including the original import value of the Goods; plus any mark-up (or rebate); plus any other related local cost, and custom duties and other import taxes already paid or to be paid on the Goods already imported.

(ii) the custom duties and other import taxes already paid (need to be supported with documentary evidence) or to be paid on the Goods already

imported;

(iii) the price of the Goods, obtained as the difference between (i) and (ii) above;

(iv) any Purchaser's Country sales and other taxes which will be payable on the Goods if the Contract is awarded to the Bidder; and

(v) the price for inland transportation, insurance, and other local services required to convey the Goods from the named place of destination to their final destination (Project Site) specified **in theBDS.**

(d) for Related Services, other than inland transportation and other services required to convey the Goods to their final destination, whenever such Related Services are specified in the Schedule of Requirements:

(i) the price of each item comprising the Related Services (inclusive of any applicable taxes).

15. Currencies of Bid and Payment

15.1 The currency(ies) of the Bid and the currency(ies) of payments shall be the same. The Bidder shall quote in the currency of the Purchaser's Country the portion of the Bid price that corresponds to expenditures incurred in the currency of the Purchaser's country, unless otherwise specified **in the BDS.**

15.2 The Bidder may express the Bid price in any currency. If the Bidder wishes to be paid in a combination of amounts in different currencies, it may quote its price accordingly but shall use no more than three foreign currencies in addition to the currency of the Purchaser's Country.

16. Documents Establishing the Eligibility and Conformity of the Goods and Related Services

16.1 To establish the eligibility of the Goods and Related Services in accordance with ITB 5, Bidders shall complete the country of origin declarations in the Price Schedule Forms, included in Section IV, Bidding Forms.

16.2 To establish the conformity of the Goods and Related Services to the bidding document, the Bidder shall furnish as part of its Bid the documentary evidence that the Goods conform to the technical specifications and standards specified in Section VII, Schedule of

Requirements.

16.3 The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed item by item description of the essential technical and performance characteristics of the Goods and Related Services, demonstrating substantial responsiveness of the Goods and Related Services to the technical specification, and if applicable, a statement of deviations and exceptions to the provisions of the Section VII, Schedule of Requirements.

16.4 The Bidder shall also furnish a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the Goods during the period specified **in the BDS** following commencement of the use of the goods by the Purchaser.

16.5 Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by the Purchaser in the Schedule of Requirements, are intended to be descriptive only and not restrictive. The Bidder may offer other standards of quality, brand names, and/or catalogue numbers, provided that it demonstrates, to the Purchaser's satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in the Section VII, Schedule of Requirements.

17. Documents Establishing the Eligibility and Qualifications of the Bidder

17.1 To establish Bidder's eligibility in accordance with ITB 4, Bidders shall complete the Letter of Bid – Technical Part, included in Section IV, Bidding Forms.

17.2 The documentary evidence of the Bidder's qualifications to perform the Contract, if its Bid is accepted, shall establish to the Purchaser's satisfaction:

(a) that, if required **in the BDS**, a Bidder that does not manufacture or produce the Goods it offers to supply shall submit the Manufacturer's Authorization using the form included in Section IV, Bidding Forms to demonstrate that it has been

duly authorized by the manufacturer or producer of the Goods to supply these Goods in the Purchaser's Country;

(b) that, if required **in the BDS**, in case of a Bidder not doing business within the Purchaser's Country, the Bidder is or will be (if awarded the Contract) represented by an Agent in the country equipped and able to carry out the Supplier's maintenance, repair and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications; and

(c) that the Bidder meets each of the qualification criterion specified in Section III, Evaluation and Qualification Criteria.

18. Period of Validity of Bids

18.1. Bids shall remain valid for the Bid Validity period specified **in the BDS**. The Bid Validity period starts from the date fixed for the Bid submission deadline (as prescribed by the Purchaser in accordance with ITB 22.1). A Bid valid for a shorter period shall be rejected by the Purchaser as nonresponsive.

18.2. In exceptional circumstances, prior to the expiration of the Bid validity period, the Purchaser may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a Bid Security is requested (in accordance with ITB 19), it shall also be extended for a corresponding period. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its Bid, except as provided in ITB 18.3.

18.3. If the award is delayed by a period exceeding fifty-six (56) days beyond the expiry of the initial Bid validity period, the Contract price shall be determined as follows:

(a) In the case of fixed price contracts, the Contract price shall be the Bid price adjusted by the factor **specified in theBDS**.

(b) In the case of adjustable price contracts, no

adjustment shall be made.

(c) In any case, Bid evaluation shall be based on the Bid price without taking into consideration the applicable correction from those indicated above.

19. Bid Security

19.1. The Bidder shall furnish, as part of the Technical Part of its Bid, either a Bid-Securing Declaration or a Bid Security, as specified **in theBDS,** in original form and, in the case of a Bid security**,** in the amount and currency specified **in the BDS.**

19.2. A Bid Securing Declaration shall use the form included in Section IV, Bidding Forms.

19.3. If a Bid Security is specified pursuant to ITB 19.1, the Bid security shall be a demand guarantee in any of the following forms at the Bidder's option:

(a) an unconditional guarantee issued by a bank or non-bank financial institution (such as an insurance, bonding or surety company);

(b) an irrevocable letter of credit;

(c) a cashier's or certified check; or

(d) another security **specified in the BDS**,

from a reputable source from an eligible country. If an unconditional guarantee is issued by a non-bank financial institution located outside the Purchaser's Country the issuing non-bank financial institution shall have a correspondent financial institution located in the Purchaser's Country to make it enforceable unless the Purchaser has agreed in writing, prior to Bid submission, that a correspondent financial institution is not required. In the case of a bank guarantee, the Bid security shall be submitted either using the Bid Security Form included in Section IV, Bidding Forms, or in another substantially similar format approved by the Purchaser prior to Bid submission. The Bid security shall be valid for twenty-eight (28) days beyond the original validity period of the Bid, or beyond any period of extension if requested under

ITB 18.2.

19.4. If a Bid Security is specified pursuant to ITB 19.1, any Bid not accompanied by a substantially responsive Bid Security shall be rejected by the Purchaser as non-responsive.

19.5. If a Bid Security is specified pursuant to ITB 19.1, the Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's signing the contract and furnishing the Performance Security pursuant to ITB 49.

19.6. The Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required performance security.

19.7. The Bid Security may be forfeited or the Bid Securing Declaration executed:

(a) if a Bidder withdraws its Bid during the period of Bid validity specified by the Bidder in the Letter of Bid – Technical Part and repeated in the Letter of Bid - Financial Part – Financial Part, or any extension thereto provided by the Bidder ; or

(b) if the successful Bidder fails to:

(i) sign the Contract in accordance with ITB 48; or

(ii) furnish a performance security in accordance with ITB 49.

19.8. The Bid Security or Bid-Securing Declaration of a JV must be in the name of the JV that submits the Bid. If the JV has not been legally constituted into a legally enforceable JV at the time of Bidding, the Bid security or Bid-Securing Declaration shall be in the names of all future members as named in the letter of intent referred to in ITB 4.1 and ITB 11.2.

19.9. If a Bid security is **notrequired in the BDS**, pursuant to ITB 19.1, and

(a) if a Bidder withdraws its Bid during the period of Bid validity specified by the Bidder on the Letter

of Bid – Technical Part and repeated in the Letter of Bid - Financial Part, or

(b) if the successful Bidder fails to: sign the Contract in accordance with ITB 48; or furnish a performance security in accordance with ITB 49;

the Borrower may, **if provided for in the BDS**, declare the Bidder ineligible to be awarded a contract by the Purchaser for a period of time **as stated in the BDS**.

20. Format and Signing of Bid

20.1 The Bidder shall prepare the Bid, in accordance with ITB 11 and ITB 21.

20.2 Bidders shall mark as "CONFIDENTIAL" information in their Bids which is confidential to their business. This may include proprietary information, trade secrets, or commercial or financially sensitive information.

20.3 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation **as specified in the BDS** and shall be attached to the Bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Bid where entries or amendments have been made shall be signed or initialed by the person signing the Bid.

20.4 In case the Bidder is a JV, the Bid shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.

20.5 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Bid.

D. Submission of Bids

21. Sealing and Marking of Bids

21.1 The Bidder shall deliver the Bid in two separate, sealed **envelopes** (the Technical Part and the Financial Part). These two envelopes shall be enclosed in a sealed outer envelope marked

"ORIGINAL BID".

21.2 In addition, the Bidder shall submit copies of the Bid in the number specified **in the BDS**. Copies of the Technical Part shall be placed in a separate sealed envelope marked "COPIES: TECHNICAL PART". Copies of the Financial Part shall be placed in a separate sealed envelope marked "COPIES: FINANCIAL PART". The Bidder shall place both of these envelopes in a separate, sealed outer envelope marked "BID COPIES". In the event of any discrepancy between the original and the copies, the original shall prevail. If alternative Bids are permitted in accordance with ITB 13, the alternative Bids shall be submitted as follows: the original of the alternative Bid Technical Part shall be placed in a sealed envelope marked "ALTERNATIVE BID – TECHNICAL PART" and the Financial Part shall be placed in a sealed envelope marked "ALTERNATIVE BID – FINANCIAL PART" and these two separate sealed envelopes then enclosed within a sealed outer envelope marked "ALTERNATIVE BID – ORIGINAL", the copies of the alternative Bid will be placed in separate sealed envelopes marked "ALTERNATIVE BID – COPIES OF TECHNICAL PART", and "ALTERNATIVE BID – COPIES OF FINANCIAL PART" and enclosed in a separate sealed outer envelope marked "ALTERNATIVE BID - COPIES"

21.3 The envelopes marked "ORIGINAL BID" and "BID COPIES" (and, if appropriate, a third envelope marked "ALTERNATIVE BID") shall be enclosed in a separate sealed outer envelope for submission to the Purchaser.

21.4 All inner and outer envelopes, shall:

(a) bear the name and address of the Bidder;

(b) be addressed to the Purchaser in accordance with ITB 22.1;

(c) bear the specific identification of this Bidding process indicated in ITB 1.1; and

(d) bear a warning not to open before the time and date for Bid opening.

21.5 If all envelopes are not sealed and marked as

required, the Purchaser will assume no responsibility for the misplacement or premature opening of the Bid.

22. Deadline for Submission of Bids

22.1. Bids must be received by the Purchaser at the address and no later than the date and time specified**intheBDS. When so specified in the BDS**, Bidders shall have the option of submitting their Bids electronically. Bidders submitting Bids electronically shall follow the electronic Bid submission procedures **specified in the BDS**.

22.2. The Purchaser may, at its discretion, extend the deadline for the submission of Bids by amending the bidding document in accordance with ITB 8, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

23. Late Bids

23.1. The Purchaser shall not consider any Bid that arrives after the deadline for submission of Bids, in accordance with ITB 23. Any Bid received by the Purchaser after the deadline for submission of Bids shall be declared late, rejected, and returned unopened to the Bidder.

24. Withdrawal, Substitution, and Modification of Bids

24.1. A Bidder may withdraw, substitute, or modify its Bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization (the power of attorney) in accordance with ITB 20.3, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Bid must accompany the respective written notice. All notices must be:

(a) prepared and submitted in accordance with ITB 20 and ITB 21 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," or "MODIFICATION;" and

(b) received by the Purchaser prior to the deadline prescribed for submission of Bids, in accordance

with ITB 22.

24.2. Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders.

24.3. No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of Bids and the expiration of the period of Bid validity specified by the Bidder on the Letter of Bid and repeated in the Letter of Bid - Financial Part, or any extension thereof.

E. Public Opening of Technical Parts of Bids

25. Public Opening of Technical Parts of Bids

25.1. Except as in the cases specified in ITB 23 and ITB 24.2, the Purchaser shall, at this Bid opening, publicly open and read out, in accordance with this ITB, all bids received by the deadline at the date, time and place specified **in theBDS**in the presence of Bidders' designated representatives and anyone who chooses to attend. Any specific electronic Bid opening procedures required if electronic Bidding is permitted in accordance with ITB 22.1, shall be as specified **in theBDS.**

25.2. First, the written notice of withdrawal in the envelopes marked "WITHDRAWAL" shall be opened and read out and the envelope with the corresponding Bid shall not be opened, but returned to the Bidder. If the withdrawal envelope does not contain a copy of the "power of attorney" confirming the signature as a person duly authorized to sign on behalf of the Bidder, the corresponding Bid will be opened. No Bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at Bid opening.

25.3. Next, envelopes marked "SUBSTITUTION" shall be opened and read out and exchanged with the corresponding Bid being substituted, and the substituted Bid shall not be opened, but returned to the Bidder. No Bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request

the substitution and is read out at Bid opening.

25.4. Next, envelopes marked "MODIFICATION" shall be opened and read out with the corresponding Bid. No Bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at Bid opening. Only Bids that are opened and read out at Bid opening shall be considered further.

25.5. Next, all other envelopes marked "TECHNICAL PART" shall be opened one at a time. All envelopes marked "FINANCIAL PART" shall remain sealed, and kept by the Purchaser in safe custody until they are opened, at a later public opening, following the evaluation of the Technical Part of the Bids. On opening the envelopes marked "TECHNICAL PART" the Purchaser shall read out: the name of the Bidder and whether there is a modification; and Alternative Bid the presence or absence of a Bid Security, if required and any other details as the Purchaser may consider appropriate.

25.6. Only Technical Parts of Bids and Alternative Bid - Technical Parts that are read out at Bid opening shall be considered further in the evaluation. The Letter of Bid – Technical Part and the separate sealed envelope marked "FINANCIAL PART" are to be initialed by representatives of the Purchaser attending Bid opening in the manner specified **in theBDS.**

25.7. At the Bid opening the Purchaser shall neither discuss the merits of any Bid nor reject any Bid (except for late Bids, in accordance with ITB 23.1).

25.8. Following the opening of the Technical Parts of the Bid the Purchaser shall prepare a record that shall include, as a minimum:

(a) the name of the Bidder and whether there is a withdrawal, substitution, or modification;

(b) the presence or absence of a duly sealed envelope marked "FINANCIAL PART";

(c) the presence or absence of a Bid Security or Bid-Securing Declaration; and

(d) if applicable, any Alternative Bid - Technical Part;

25.9. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

F. Evaluation of Bids - General Provisions

26. Confidentiality

26.1 Information relating to the evaluation of Bids and recommendation of contract award, shall not be disclosed to Bidders, or any other persons not officially concerned with the Bidding process, until after the Purchaser transmits to all Bidders the Notification of Intention to Award the Contract in accordance with ITB 43.1.

26.2 Any effort by a Bidder to influence the Purchaser in the evaluation or contract award decisions may result in the rejection of its Bid.

26.3 Notwithstanding ITB 26.2, from the time of Bid opening to the time of Contract Award, if any Bidder wishes to contact the Purchaser on any matter related to the Bidding process, it should do so in writing.

27. Clarification of Bids

27.1 To assist in the examination, evaluation, comparison of the Bids, and qualification of the Bidders, the Purchaser may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder in respect to its Bid and that is not in response to a request by the Purchaser shall not be considered. The Purchaser's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Purchaser in the Evaluation of the Bids, in

accordance with ITB 35.

27.2 If a Bidder does not provide clarifications of its Bid by the date and time set in the Purchaser's request for clarification, its Bid may be rejected.

28. Deviations, Reservations, and Omissions

28.1 During the evaluation of Bids, the following definitions apply:

(a) "Deviation" is a departure from the requirements specified in the bidding document;

(b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the bidding document; and

28.2 "Omission" is the failure to submit part or all of the information or documentation required in the bidding document.

29. Nonconformities, Errors and Omissions

29.1 Provided that a Bid is substantially responsive, the Purchaser may waive any nonconformities in the Bid.

29.2 Provided that a Bid is substantially responsive, the Purchaser may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the Bid related to documentation requirements. Such omission shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

29.3 Provided that a Bid is substantially responsive, the Purchaser shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component in the manner specified **in the BDS**.

G. Evaluation of Technical Parts of Bids

30. Evaluation of Technical Parts

30.1 In evaluating the Technical Parts of each Bid, the Purchaser shall use the criteria and methodologies listed in ITB 31, ITB 32, the

BDS, if applicable, and Section III, Evaluation and Qualification Criteria. No other evaluation criteria or methodologies shall be permitted.

31. Determination of Responsiveness

31.1 The Purchaser's determination of a Bid's responsiveness is to be based on the contents of the Bid itself, as defined in ITB 11. A substantially responsive Bid is one that meets the requirements of the bidding document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that:

(a) if accepted, would:

(i) affect in any substantial way the scope, quality, or performance of the Goods and Related Services specified in the Contract; or

(ii) limit in any substantial way, inconsistent with the bidding document, the Purchaser's rights or the Bidder's obligations under the Contract; or

(b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.

31.2 The Purchaser shall examine the technical aspects of the Bid submitted in accordance with ITB 16 and ITB 17, in particular, to confirm that all requirements of Section VII, Schedule of Requirements have been met without any material deviation or reservation, or omission.

31.3 If a Bid is not substantially responsive to the requirements of bidding document, it shall be rejected by the Purchaser and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

32. Qualification of the Bidders

32.1 The Purchaser shall determine, to its satisfaction, whether all eligible Bidders, whose Bids have been determined to be substantially responsive to the bidding document, meet the Qualification Criteria specified in Section III, Evaluation and Qualification Criteria.

32.2 The determination shall be based upon an

examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 17. The determination shall not take into consideration the qualifications of other firms such as the Bidder's subsidiaries, parent entities, affiliates, subcontractors (other than specialized subcontractors if permitted in the bidding document), or any other firm different from the firm.

H. Public Opening of Financial Parts of Bids

33. Public Opening of Financial Parts

33.1 Following the completion of the evaluation of the Technical Parts of the Bids, the Purchaser shall notify in writing those Bidders who have failed to meet the Qualification Criteria and/or whose Bids were considered non-responsive to the requirements in the bidding document, advising them of the following information:

(a) their Technical Part of Bid failed to meet the requirements of the bidding document;

(b) their envelope marked "FINANCIAL PART" will be returned to them unopened after the completion of the bid evaluation process and the signing of the Contract;

(c) notify them of the date, time and location of the public opening of the envelopes marked 'FINANCIAL PART".

33.2 The Purchaser shall, simultaneously, notify in writing those Bidders whose Technical Parts have been evaluated as substantially responsive to the bidding document and met the Qualification Criteria, advising them of the following information:

(a) their Bid has been evaluated as substantially responsive to the bidding document and met the Qualification Criteria; and

(b) their envelope marked "FINANCIAL PART" will be opened at the public opening of Financial Parts;

(c) notify them of the date, time and location of the public opening of the envelopes marked

"FINANCIAL PART".

33.3 The opening date should allow Bidders sufficient time to make arrangements for attending the opening. The Financial Part of the Bid shall be opened publicly in the presence of Bidders' designated representatives and anyone who chooses to attend.

33.4 At this public opening the Financial Parts will be opened by the Purchaser in the presence of Bidders, or their designated representatives and anyone else who chooses to attend. Bidders who met the Qualification Criteria and whose Bids were evaluated as substantially responsive will have their envelopes marked "FINANCIAL PART" opened at the second public opening. Each of these envelopes marked "FINANCIAL PART" shall be inspected to confirm that they have remained sealed and unopened. These envelopes shall then be opened by the Purchaser. The Purchaser shall read out the names of each Bidder, and the total Bid prices, per lot (contract) if applicable, including any discounts and Alternative Bid - Financial Part, and any other details as the Purchaser may consider appropriate.

33.5 Only envelopes of Financial Part of Bids, Financial Parts of Alternative Bids and discounts that are opened and read out at Bid opening shall be considered further for evaluation. The Letter of Bid - Financial Part and the Price Schedules are to be initialed by a representative of the Purchaser attending the Bid opening in the manner specified **in the BDS**.

33.6 The Purchaser shall neither discuss the merits of any Bid nor reject any envelopes marked "FINANCIAL PART".

33.7 The Purchaser shall prepare a record of the Financial Part of the Bid opening that shall include, as a minimum:

(a) the name of the Bidder whose Financial Part was opened;

(b) the Bid price, per lot (contract) if applicable,

including any discounts,

(c) if applicable, any Alternative Bid - Financial Part.

33.8 The Bidders whose envelopes marked 'FINANCIAL PART" have been opened or their representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

I. Evaluation of Financial Parts of Bids

34. Evaluation of Financial Parts

34.1 To evaluate the Financial Part of each Bid, the Purchaser shall consider the following:

(a) evaluation will be done for Items or Lots (contracts), as specified **in theBDS;** andthe Bid Price as quoted in accordance with ITB 14;

(b) price adjustment for correction of arithmetic errors in accordance with ITB 35.1;

(c) price adjustment due to discounts offered in accordance with ITB 14.4;

(d) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITB 36;

(e) price adjustment due to quantifiable nonmaterial nonconformities in accordance with ITB 29.3; and

(f) the additional evaluation factors specified in Section III, Evaluation and Qualification Criteria.

34.2 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in Bid evaluation.

34.3 If this bidding document allows Bidders to quote separate prices for different lots (contracts), the methodology to determine the lowest evaluated cost of the lot (contract) combinations, including

any discounts offered in the Letter of Bid - Financial Part, is specified in Section III, Evaluation and Qualification Criteria.

34.4 The Purchaser's evaluation of a Bid will exclude and not take into account:

(a) in the case of Goods manufactured in the Purchaser's Country, sales and other similar taxes, which will be payable on the goods if a contract is awarded to the Bidder;

(b) in the case of Goods manufactured outside the Purchaser's Country, already imported or to be imported, customs duties and other import taxes levied on the imported Good, sales and other similar taxes, which will be payable on the Goods if the contract is awarded to the Bidder;

(c) any allowance for price adjustment during the period of execution of the contract, if provided in the Bid.

34.5 The Purchaser's evaluation of a Bid may require the consideration of other factors, in addition to the Bid price quoted in accordance with ITB 14. These factors may be related to the characteristics, performance, and terms and conditions of purchase of the Goods and Related Services. The effect of the factors selected, if any, shall be expressed in monetary terms to facilitate comparison of Bids, unless otherwise specified **in the BDS** from amongst those set out in Section III, Evaluation and Qualification Criteria. The criteria and methodologies to be used shall be as specified in ITB 34.1 (f).

35. Correction of Arithmetical Errors

35.1 In evaluating the Financial Part of each Bid, the Purchaser shall correct arithmetical errors on the following basis:

(a) if there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the line item total as quoted shall govern and the

unit price shall be corrected;

(b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

(c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

35.2 Bidders shall be requested to accept correction of arithmetical errors. Failure to accept the correction in accordance with ITB 35.1 and ITB 35.2, shall result in the rejection of the Bid.

36. Conversion to Single Currency

36.1 For evaluation and comparison purposes, the currency(ies) of the Bids shall be converted in a single currency as specified **in theBDS.**

37. MarginofPreference

37.1 Unlessotherwise specified **in theBDS,** a margin of preference shall not apply.

38. Comparison of Financial Parts

38.1 The Purchaser shall compare the evaluated costs of the Bids to determine the Bid that has the lowest evaluated cost. The comparison shall be on the basis of CIP (place of final destination) prices for imported goods and EXW prices, plus cost of inland transportation and insurance to place of destination, for goods manufactured within the Borrower's country, together with prices for any required installation, training, commissioning and other services. The evaluation of prices shall not take into account custom duties and other taxes levied on imported goods quoted CIP and sales and similar taxes levied in connection with the sale or delivery of goods.

39. Abnormally Low Bids

39.1 An Abnormally Low Bid is one where the Bid price, in combination with other elements of the Bid, appears so low that it raises material concerns with the Purchaser as to the capability of the Bidder to perform the Contract for the offered Bid Price.

39.2 In the event of identification of a potentially

Abnormally Low Bid, the Purchaser shall seek written clarification from the Bidder, including a detailed price analyses of its Bid price in relation to the subject matter of the contract, scope, delivery schedule, allocation of risks and responsibilities and any other requirements of the bidding document.

39.3 After evaluation of the price analyses, in the event that the Purchaser determines that the Bidder has failed to demonstrate its capability to perform the contract for the offered Bid price, the Purchaser shall reject the Bid.

40. Most Advantageous Bid

40.1 Having compared the evaluated costs of Bids, the Purchaser shall determine the Most Advantageous Bid. The Most Advantageous Bid is the Bid of the Bidder that meets the Qualification Criteria and whose Bid has been determined to be:

(a) substantially responsive to the bidding document, and

(b) the lowest evaluated cost.

41. Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids

41.1 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 Contract Award, without thereby incurring any liability to Bidders. In case of annulment, all Bids submitted and specifically, Bid securities, shall be promptly returned to the Bidders.

42. Not Used

42.1 Not Used

43. Not Used

43.1Not Used

J. Award of Contract

44. Award Criteria

44.1 Subject to ITB 41, the Purchaser shall award the Contract to the successful Bidder. This is the Bidder whose Bid has been determined to be the Most Advantageous Bid as specified in ITB 40.

45. Purchaser's Right to Vary Quantities at Time of Award

45.1 At the time the Contract is awarded, the Purchaser reserves the right to increase or decrease the quantity of Goods and Related

Services originally specified in Section VII, Schedule of Requirements, provided this does not exceed the percentages **specified in the BDS,** and without any change in the unit prices or other terms and conditions of the Bid and the bidding document.

46. Notification of Award

46.1 Prior to the expiration of the Bid Validity Period and upon expiry of the Standstill Period, specified in BDS ITB 42.1 or any extension thereof, or upon satisfactorily addressing a complaint that has been filed within the Standstill Period, the Purchaser shall transmit the Letter of Acceptance to the successful Bidder. The Letter of Acceptance shall specify the sum that the Purchaser will pay the Supplier in consideration of the execution of the Contract (hereinafter and in the Conditions of Contract and Contract Forms called "the Contract Price").

46.2 At the same time, the Purchaser shall publish the Contract Award Notice which shall contain, at a minimum, the following information:

(a) name and address of the Purchaser;

(b) name and reference number of the contract being awarded, and the selection method used;

(c) names of all Bidders that submitted Bids, and their Bid prices as read out at Bid opening, and as evaluated;

(d) names of all Bidders whose Bids were rejected either as nonresponsive or as not meeting qualification criteria, or were not evaluated, with the reasons therefor; and

(e) the name of the successful Bidder, the final total contract price, the contract duration and a summary of its scope.

46.3 The Contract Award Notice shall be published on the Purchaser's website with free access if available, or in at least one newspaper of national circulation in the Purchaser's Country, or in the official gazette. The Purchaser shall also publish the contract award notice in UNDB online.

46.4 Until a formal Contract is prepared and executed, the Letter of Acceptance shall constitute a binding Contract.

47. Not Used

47.1 Not Used

48. Signing of Contract

48.1 Promptly upon Notification of Award, the Purchaser shall send the successful Bidder the Contract Agreement.

48.2 Within twenty-eight (28) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Purchaser.

48.3 Notwithstanding ITB 48.2 above, in case signing of the Contract Agreement is prevented by any export restrictions attributable to the Purchaser, to the country of the Purchaser, or to the use of the products/goods, systems or services to be supplied, where such export restrictions arise from trade regulations from a country supplying those products/goods, systems or services, the Bidder shall not be bound by its Bid, always provided however, that the Bidder can demonstrate to the satisfaction of the Purchaser that signing of the Contact Agreement has not been prevented by any lack of diligence on the part of the Bidder in completing any formalities, including applying for permits, authorizations and licenses necessary for the export of the products/goods, systems or services under the terms of the Contract.

49. Performance Security

49.1 Within twenty-eight (28) days of the receipt of the Lettter of Acceptance from the Purchaser, the successful Bidder, if required, shall furnish the Performance Security in accordance with the GCC 18 using for that purpose the Performance Security Form included in Section X, Contract Forms, or another Form acceptable to the Purchaser. If the Performance Security furnished by the successful Bidder is in the form of a bond, it shall be issued by a bonding or insurance company that has been determined by the successful Bidder to be acceptable to the

Purchaser. A foreign institution providing a bond shall have a correspondent financial institution located in the Purchaser's Country, unless the Purchaser has agreed in writing that a correspondent financial institution is not required.

49.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event the Purchaser may award the Contract to the Bidder offering the Most Advantageous Bid.

Section II - Bid Data Sheet (BDS)

The following specific data for the Goods to be procured shall complement, supplement, and/or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

<table>
<tr><th>ITB Reference</th><th>A. General</th></tr>
<tr><td>ITB 1.1</td><td>
The Purchaser is:
Meghalaya Basin Management Agency,
C/o Meghalaya State Housing Financing & Cooperative Society,
Upper Nongrim Hills
Shillong, India – 793003
Telephone: 0364 2522043
E-mail:mbdaprocurement@gmail.com
Website: www.mbda.gov.in

The name and identification number of the NCB is:
Name: Procurement Of Equipments For Establishment Of Quality Control And Analytical Laboratory

The number, identification and names of the lots (contracts)comprising this NCB are: IFB Reference: MBDA/BRDC/778/2021-22/586

<table>
<tr><th>Bid Reference #</th><th>Lots</th><th>Total no.</th><th>EMD (INR)</th></tr>
<tr><td>RFB: MBDA/BRDC/ 778/2021-22/586</td><td>Procurement Of Equipments For Establishment Of Quality Control And Analytical Laboratory</td><td>181</td><td>16,57,000/-</td></tr>
</table>

Destination: Delivery to be completed after signing the contract at the locations as mentioned under the Technical Specifications section
</td></tr>
</table>

ITB 4.1	Maximum number of members in the Joint Venture (JV) shall be: ***Two including the Lead Member***
	B. Contents of Bidding Document
ITB 7.1	For **Clarification of bid purposes** only, the Purchaser's address is: Attention: *Procurement Section* Meghalaya Basin Development Authority, C/o Meghalaya State Housing Financing & Cooperative Society, Upper Nongrim Hills Shillong, India – 793003 Telephone: 0364 2522043 E-mail:mbdaprocurement@gmail.com www.mbda.gov.in
ITB 7.2	Added the following as clause 7.2: A Pre-Bid Conference will be held at [11.00 Hrs] (local time) on [**March 17, 2022 at Meghalaya Basin Development Authority**]. Attendance is strongly advised for all prospective Bidders or their representatives but is not mandatory. Considering the present pandemic situation; pre-bid conference can also be attended virtually. Interested bidders are requested to send their request to attend the pre-bid conference to mbdaprocurement@gmail.com for sending them the link. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage. Participation in the pre-bid meeting is optional. Minutes and/or addendum will be made available on the project website at www.mbda.gov.in . Bidders must keep a regular watch on the website for any changes or updates on this procurement.
	C. Preparation of Bids
ITB 10.1	The language of the Bid is: ***"English"*** All correspondence exchange shall be in English language.
ITB 11.2 (i) & 11.3 (d)	The Bidder shall submit the following additional documents in its bid: . Bidder must submit Audited Financial Statements and/or Bank Certificate for the last 3 years in support of average annual turnover. (2017 – 18; 2018 – 19 and 2019 – 20)

	. Technical schedules of goods as required by technical specifications. . A detailed description of the Goods essential technical and performance characteristics . A clause-by-clause 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. . For purposes of the commentary to be furnished pursuant to clause 4 above, the Bidder shall note that standards for workmanship, material and goods, and any 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 substitutions ensure substantial equivalence to those designated in the Technical Specifications . The documentary evidence of the goods and services eligibility shall consist of a statement in the Price Schedule on the country of origin of the goods and services offered which shall be confirmed by a certificate of origin at the time of shipment . Non-manufacturer bidders will submit the manufacturer's authorization Form as per Performa in Section IV. . The bidder shall disclose instance of previous past performance that may have resulted into adverse actions taken against the bidder during the last five years. Such adverse actions taken against the bidder may be treated as unsatisfactory performance history while deciding the award of contract. If no instance of previous past performance has resulted into adverse actions this should be clearly indicated in the Bidder's bid. . Attested copy of Company's PAN, GST and Income Tax details and ward/circle where it is being assessed. 0. List of service centre details of the technical personnel working with the Bidder. 1. Original brochures with relevant page(s) in support of the technical specifications of the equipment along with the web addresses/URL of the manufacturers. 2. **Bidders exempted from any taxes or licences must submit clear photocopies of those certificates/licences.**

ITB 13.1	Alternative Bids *shall not be* considered.
ITB 14.5	The prices quoted by the Bidder *shall not* be subject to adjustment during the performance of the Contract.
ITB 14.7	The Incoterms edition is: ***2010***
ITB 14.8 (a)(iii), (b)(ii) and (c)(v)	"Final Delivery (Project Site)": Bio-Resources Development Centre (BRDC) 5 ½ Mile, Upper Shillong-793009, Meghalaya Ph. No. 0364-2561530 Fax: 0364-2561530 Email: brdcshillong@gmail.com
ITB 16.4	Period of time the Goods are expected to be functioning (for the purpose of spare parts): 5 years
ITB 17.2 (a)	Manufacturer's authorization is: Required
ITB 17.2 (b)	After sales service is: Required
ITB 18.1	The Bid validity period shall be ***120 days***
ITB 18.3 (a)	The Bid price shall Not be adjusted
ITB 19.1	Bid shall include a Bid Security (issued by bank) included in Section IV Bidding Forms; The Bid Security Instrument shall be drawn in favor of ***Meghalaya Basin Development Authority***, Shillong, Meghalaya**.** Bidders are required to provide contact details of the issuing bank (email) for the purpose of verifying the authenticity of the bid security. The amount of Bid Security will be INR 16,57,000 /-
ITB 20.3	The written confirmation of authorization to sign on behalf of the Bidder shall consist of**:** ***Power of Attorney***
	D. Submission of Bids
ITB 21.2	In addition to the original of the bid, the number of copies is: Two; and a soft copy in pen drive. *The original signed and company stamped hard copy will prevail in case of any deviations.*

ITB 22.1	For bid submission purposes, the Purchaser's address is: Address: Meghalaya Basin Development Authority, C/o Meghalaya State Housing Financing & Cooperative Society, Upper Nongrim Hills Shillong, India – 793003 Telephone: 03642522043 E-mail:mbdaprocurement@gmail.com Website: www.mbda.gov.in Attention: *The Executive Director, MBDA* The deadline for the submission of bids is: **Date : March 31, 2022** **Time: 1600 hrs.**
	E. Public Opening of Technical Parts
ITB 25.1	The Technical bid opening shall take place at: Meghalaya Basin Development Authority, C/o Meghalaya State Housing Financing & Cooperative Society, Upper Nongrim Hills Shillong, India – 793003 Telephone: 03642522921 E-mail:mbdaprocurement@gmail.com Website: www.mbda.gov.in **Date: : March 31, 2022** **Time: 1630 hrs.**
ITB 25.6	The Letter of Bid - Technical Part and the sealed envelope marked "Second Envelope - Financial Part" shallbe initialed by three representatives of the Purchaser conducting Bid opening.
F. Evaluation of Bids – General Provisions	
ITB 29.3	The adjustment shall be based on the highest price of the item or component as quoted in other substantially responsive Bids. If the price of the item or component cannot be derived from the price of other substantially responsive Bids, the Purchaser shall use its best estimate.

H. Public Opening of Financial Parts	
ITB 33.5	Following the completion of the evaluation of the Technical Parts of the Bids, the Purchaser will notify all Bidders of the location, date and time of the public opening of Financial Parts. The Purchaser shall publish a notice of the public opening of the Financial Parts on its website.
	I. Evaluation of Bids - Financial Parts
ITB 34.1(a)	***"Bids will be evaluated for each item and the Contract will comprise the item(s) awarded to the successful Bidder".***
ITB 34.5	The adjustments shall be determined using the following criteria, from amongst those set out in Section III, Evaluation and Qualification Criteria: Deviation in Delivery schedule: Not Applicable Deviation in payment schedule:Not Applicable The cost of major replacement components, mandatory spare parts, and service: Not Applicable The availability in India, of spare parts and after sales services for the equipment offered in the bid. An adjustment equal to the cost to the Purchaser of establishing the minimum service facilities and part inventories, if quoted separately, shall be added to the bid price, for evaluation purpose only. The projected operating and maintenance costs during the life of the equipment: Not Applicable The performance and productivity of the equipment offered: Not Applicable The additional evaluation factors are specified in Section III, Evaluation and Qualification Criteria: Applicable
	J. Award of Contract
ITB 45.1	The maximum percentage by which quantities may be increased is: ***20*** The maximum percentage by which quantities may be decreased is:***20***

Section III - Evaluation and Qualification Criteria

This Section contains the criteria that the Purchaser shall use to evaluate Bids and qualify the Bidders. No other factors, methods or criteria shall be used other than specified in this bidding document.

Contents

The Purchaser shall use the criteria and methodologies listed in this Section to determine the Most Advantageous Bid. The Most Advantageous Bid is the Bid of the Bidder that meets the qualification criteria and whose Bid has been determined to be:

(a) substantially responsive to the bidding document, and

(b) the lowest evaluated cost.

TECHNICAL PART

1. Qualification (ITB 32)

1.1 Qualification Criteria (ITB 32.1)

Purchaser will evaluate the technical bids of the bidders; bids which meets the technical requirement (as per technical specifications and various requirement of warranty, operations and maintenance of five years, availability of spare parts, training to district and block level officials etc.

Financial bids will be opened for only technically qualified bidders, after which post qualification will be done to arrive at the most advantageous bid.

POST QUALIFICATION CRITERIA

S #	Description	Laboratory Equipments
1	Financial: The Bidder must have average annual turnover during the last 3 (three) years. (2017 – 2018; 2018 – 2019; 2019 – 2020)	INR 5 Crore
2	Technical: If bidder is supplier of the product(s) then it should have at least three (3) years' experience of trading	Experience in similar product(s) i.e. **Laboratory Equipments** etc, with minimum INR 4 crore within a period of last 3 years for any 5 Contracts obtained by you. (single contract of the required or higher value may also be acceptable) .

S #	Description	Laboratory Equipments
3	Technical: if the bidder is a manufacturer of the product(s) then it should have at least three (3) years of experience of manufacturing and sale of the products offered.	Experience in similar product(s) i.e. **Laboratory Equipments** etc, with minimum INR 16 crore within a period of last 3 years for any 5 Contracts obtained by you. (single contract of the required or higher value may also be acceptable) .

NOTE:

1. Bidder is required to submit the audited statements of last three years as proof for financial capability. (2017 – 2018; 2018 – 2019; 2019 – 2020)
2. Bidder is required to submit the clear copies of contracts/work or purchase orders of the last three years to substantiate the technical capability.

If the bidder is a Joint venture (JV), each member should meet the above requirement.

If the bidder is a Joint Venture (JV), all members of the JV should jointly meet the above qualification requirements. One member (the member in charge) should meet at least seventy percent (70%) and one member should meet at least thirty percent (30%) of the above qualification requirement.

3.2 The bidder must have:

1. Qualified Service Engineers,
2. Spare Parts Stock &
3. After Sales Services facilities in Shillong, Meghalaya. Facilities available in Guwahati, Assam will also be acceptable. If the facility doesn't exist at the time of bidding; Successful bidder will be required to establish an After Sales Service Centre in Shillongafter accepting the Letter of Acceptance and before signing the contract;

to satisfy warranty and service conditions laid down in SCC 28.(Bidder to provide names and details of engineers, list of facilities etc. along with the bid.)

3.3 The Bidder shall furnish documentary evidence to demonstrate that the Goods it offers meet the following usage requirement: *Original Catalogue*

FINANCIAL PART

3. Evaluation(ITB 30, 31, and 34)

3.1. Evaluation Criteria (ITB 34.5)

The Purchaser's evaluation of a bid may take into account, in addition to the Bid Price quoted in accordance with ITB Clause 14.8, one or more of the following factors as specified in ITB Sub-Clause 34.2 (f) and in BDS referring to ITB 34.6**,**usingthe following criteria and methodologies.

(a) Delivery schedule. (as per Incoterms specified in the BDS)

The Goods specified in the List of Goods are required to be delivered within the acceptable time range (after the earliest and before the final date, both dates inclusive) specified in Section VII, Schedule of requirements. No credit will be given to deliveries before the earliest date, and bids offering delivery after the final date shall be treated as non-responsive.

(b) Deviation in payment schedule.

No deviation in the payment scheduled is allowed

(c) Cost of major replacement components, mandatory spare parts, and service.

Deleted

(d) Availability in the Purchaser's Country of spare parts and after sales services for equipment offered in the bid.

An adjustment equal to the cost to the Purchaser of establishing the minimum service facilities and parts inventories, as outlined in BDS Sub-Clause 34.6, if quoted separately, shall be added to the bid price, for evaluation purposes only.

(e) Projected operating and maintenance costs are not allowed

(f) Performance and productivity of the equipment are not considered

(g) Specific additional criteria

- *Warranty – 3 years*
- *Operations and Annual Maintenance for 5 years including 3 years warranty period*
- *Capacity Building and training for 5 technical staff.*

Section IV - Bidding Forms

Table of Forms

Letter of Bid – Technical Part

INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT

Place this Letter of Bid in the first envelope "TECHNICAL PART".

The Bidder must prepare the Letter of Bid on stationery with its letterhead clearly showing the Bidder's complete name and business address.

Note: All italicized text in black font is to help Bidders in preparing this form and Bidders shall delete it from the final document.

Date of this Bid submission: [*insert date (as day, month and year) of Bid submission*]
RFB No.: [*insert number of Bidding process*]

To: **[*insert complete name of Purchaser*]**

We, the undersigned Bidder, hereby submit our Bid, in two parts, namely:

(a) the Technical Part, and

(b) the Financial Part.

In submitting our Bid we make the following declarations:

(a) **No reservations:** We have examined and have no reservations to the bidding document, including addenda issued in accordance with Instructions to Bidders (ITB 8);

(b) **Eligibility**: We meet the eligibility requirements and have no conflict of interest in accordance with ITB 4;

(c) **Bid/Proposal-Securing Declaration**: We havenot been suspended nor declared ineligible by the Purchaser based on execution of a Bid/Proposal Securing Declaration in the Purchaser's country in accordance with ITB 4.7;

(d) **Conformity:** We offer to supply in conformity with the bidding document and in accordance with the Delivery Schedules specified in the Schedule of Requirements the following Goods: [*insert a brief description of the Goods and Related Services*];

(e) **Bid Validity Period**: Our Bid shall be valid for the period specified in BDS 18.1 (as amended, if applicable) from the date fixed for the Bid submission deadline specified in BDS 22.1 (as amended, if applicable), and it shall remain binding upon us, and may be accepted at any time before the expiration of that period;

(f) **Performance Security**: If our Bid is accepted, we commit to obtain a performance security in accordance with the bidding document;

(g) **One Bid per Bidder**: We are not submitting any other Bid(s) as an individual Bidder, and weare not participating in any other bid(s) as a Joint Venture member or as a subcontractor,

and meet the requirements of ITB 4.3, other than Alternative Bids submitted in accordance with ITB 13;

(h) **State-owned enterprise or institution**: [*select the appropriate option and delete the other*] [*We are not a state-owned enterprise or institution*] / [*We are a state-owned enterprise or institution but meet the requirements of ITB 4.6*];

(i) **Binding Contract**: We understand that this Bid, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;

(j) **Not Bound to Accept**: We understand that you are not bound to accept the lowest evaluated cost Bid, the Most Advantageous Bid or any other Bid that you may receive; and

(k) **Fraud and Corruption**: We hereby certify that we have taken steps to ensure that no person acting for us, or on our behalf, engages in any type of Fraud and Corruption.

Name of the Bidder: *[*insert complete name of Bidder*]

Name of the person duly authorized to sign the Bid on behalf of the Bidder: ** [*insert complete name of person duly authorized to sign the Bid*]

Title of the person signing the Bid: [*insert complete title of the person signing the Bid*]

Signature of the person named above: [*insert signature of person whose name and capacity are shown above*]

Date signed [*insert date of signing*] **day of** [*insert month*], [*insert year*]

**: Person signing the Bid shall have the power of attorney given by the Bidder. The power of attorney shall be attached with the Bid Schedules.

Letter of Bid - Financial Part

INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT

Place this Letter of Bid - Financial Part in the second envelope marked "FINANCIAL PART".

The Bidder must prepare the Letter of Bid - Financial Part on stationery with its letterhead clearly showing the Bidder's complete name and business address.

Note: All italicized text is to help Bidders in preparing this form.

Date of this Bid submission: [*insert date (as day, month and year) of Bid submission*]
RFB No.: [*insert number of bidding process*]

To: [*insert complete name of Purchaser*]

We, the undersigned Bidder, hereby submit the second part of our Bid, the Financial Part

In submitting our Financial Part we make the following additional declarations:

(a) **Bid Validity Period**: Our Bid shall be valid for the period specified in BDS 18.1 (as amended, if applicable) from the date fixed for the bid submission deadline specified in BDS 22.1 (as amended, if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(b) **Total Price:** The total price of our Bid, excluding any discounts offered in item (c) below is:

In case of only one lot, the total price of the Bid is [*insert the total price of the bid in words and figures, indicating the various amounts and the respective currencies*];

In case of multiple lots, the total price of each lot is [*insert the total price of each lot in words and figures, indicating the various amounts and the respective currencies*];

In case of multiple lots, total price of all lots (sum of all lots) [*insert the total price of all lots in words and figures, indicating the various amounts and the respective currencies*];

(c) **Discounts:** The discounts offered and the methodology for their application are:

(i) The discounts offered are: [*Specify in detail each discount offered*]

(ii) The exact method of calculations to determine the net price after application of discounts is shown below: [*Specify in detail the method that shall be used to apply the discounts*];

(d) **Commissions, gratuities and fees:** We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract: [*insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity*].

Name of Recipient	Address	Reason	Amount

(If none has been paid or is to be paid, indicate "none.")

(e) **Binding Contract:** We understand that this Bid, together with your written acceptance thereof included in your Notification of Award, shall constitute a binding contract between us, until a formal contract is prepared and executed.

Name of the Bidder:*[*insert complete name of the Bidder*]

Name of the person duly authorized to sign the Bid on behalf of the Bidder: ** [*insert complete name of person duly authorized to sign the Bid*]

Title of the person signing the Bid: [*insert complete title of the person signing the Bid*]

Signature of the person named above: [*insert signature of person whose name and capacity are shown above*]

Date signed [*insert date of signing*] **day of** [*insert month*], [*insert year*]

**: Person signing the Bid shall have the power of attorney given by the Bidder. The power of attorney shall be attached with the Bid Schedules.

Bidder Information Form

[The Bidder shall fill in this Form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted.]

Date: *[insert date (as day, month and year) of Bid submission*]
RFB No.: *[insert number of Bidding process]*

Page _____ of_ _____ pages

. Bidder's Name *[insert Bidder's legal name]*
. In case of JV, legal name of each member : *[insert legal name of each member in JV]*
3. Bidder's actual or intended country of registration: *[insert actual or intended country of registration]*
4. Bidder's year of registration: *[insert Bidder's year of registration]*
5. Bidder's Address in country of registration: *[insert Bidder's legal address in country of registration]*
6. Bidder's Authorized Representative Information Name: *[insert Authorized Representative's name]* Address: *[insert Authorized Representative's Address]* Telephone/Fax numbers: *[insert Authorized Representative's telephone/fax numbers]* Email Address: *[insert Authorized Representative's email address]*
7. Attached are copies of original documents of *[check the box(es) of the attached original documents]* Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITB 4.4. In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB 4.1. In case of state-owned enterprise or institution, in accordance with ITB 4.6 documents establishing: Legal and financial autonomy Operation under commercial law Establishing that the Bidder is not under the supervision of the Purchaser . Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

Price Schedule Forms

[The Bidder shall fill in these Price Schedule Forms in accordance with the instructions indicated. The list of line items in column 1 of the ***Price Schedules*** *shall coincide with the List of Goods and Related Services specified by the Purchaser in the Schedule of Requirements.]*

Price Schedule: Goods Manufactured in the Purchaser's Country

_____	Currencies in accordance with ITB 15	Date:_____ RFB No: _____ Page N° _____ of _____

1	2	3	4	5	6	7	8	9	10
Line Item N°	Description of Goods	Delivery Date as defined by Incoterms	Quantity and physical unit	Unit price EXW	Total EXWprice per line item (Col. 4×5)	Price per line item for inland transportation and other services required in the Purchaser's Country to convey the Goods to their final destination	Cost of local labor, raw materials and components from with origin in the Purchaser's Country % of Col. 5	GST payable per line item if Contract is awarded (in accordance with ITB 14.8(a)(ii)	Total Price per line item (Col. 6+7)
[insert number of the item]	*[insert name of Good]*	*[insert quoted Delivery Date]*	*[insert number of units to be supplied and name of the physical unit]*	*[insert EXW unit price]*	*[insert total EXW price per line item]*	*[insert the corresponding price per line item]*	*[Insert cost of local labor, raw material and components from within the Purchase's country as a % of the EXW price per line item]*	*[insert sales and other taxes payable per line item if Contract is awarded]*	*[insert total price per item]*
1	Procurement Of Equipments For Establishment Of Quality Control And Analytical Laboratory		181 Nos.						
								Total Price	

Name of Bidder *[insert complete name of Bidder]* Signature of Bidder *[signature of person signing the Bid]* Date *[insert date]*

NOTE:

1. ***Bidders to refer to technical specifications section for detailed "Scope of Work" where the installation will be required.***
2. ***All Deliveries to be made at the locations mentioned in the Technical Specifications section - Delivery***
3. ***All equipmentswill be inspected and verified by BRDC.***
4. ***Supplier to arrange for capacity building of at least 5technical staff at the location.***

Price and Completion Schedule - Related Services

Currencies in accordance with ITB 15					Date:_____ __ RFB No: _____ Alternative No: _____ Page N° _____ of _____	
1	2	3	4	5	6	7
Service N°	Description of Services (excludes inland transportation and other services required in the Purchaser's Country to convey the goods to their final destination)	Country of Origin	Delivery Date at place of Final destination	Quantity and physical unit	Unit price	Total Price per Service (Col. 5*6 or estimate)
[insert number of the Service]	*[insert name of Services]*	*[insert country of origin of the Services]*	*[insert delivery date at place of final destination per Service]*	*[insert number of units to be supplied and name of the physical unit]*	*[insert unit price per item]*	*[insert total price per item]*
1	*Performance or supervision of the on-site installation of the supplied Goods including and commissioning.*			181		
2	*Furnishing of detailed operations and maintenance manual for each appropriate unit of supplied Goods.*			181		
3	*Operation & Annual Maintenance of equipmentfor 5 years from the date of installation and acceptance including warranty of three years.*			181		
4	*Training of at least 5 technical staff at the location*			181		
				Total Bid Price		

Name of Bidder *[insert complete name of Bidder]* Signature of Bidder *[signature of person signing the Bid]* Date *[insert date]*

Form of Bid Security

(Bank Guarantee)

[The bank shall fill in this Bank Guarantee Form in accordance with the instructions indicated.]

[Guarantor letterhead]

Beneficiary: *[Purchaser to insert its name and address]*

RFB No.: *[Purchaser to insert reference number for the Request for Bids]*

Alternative No.*: [Insert identification No if this is a Bid for an alternative]*

Date:*[Insert date of issue]*

BID GUARANTEE No.:*[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _____ *[insert name of the Bidder, which in the case of a joint venture shall be the name of the joint venture (whether legally constituted or prospective) or the names of all members thereof]* (hereinafter called "the Applicant") has submitted or will submit to the Beneficiary its Bid (hereinafter called "the Bid") for the execution of _____ under Request for Bids No. _____ _ ("the RFB").

Furthermore, we understand that, according to the Beneficiary's conditions, Bids must be supported by a Bid guarantee.

At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (_____) upon receipt by us of the Beneficiary's complying demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:

(a) has withdrawn its Bid during the period of Bid validity set forth in the Applicant's Letter of Bid ("the Bid Validity Period"), or any extension thereto provided by the Applicant; or

(b) having been notified of the acceptance of its Bid by the Beneficiary during the Bid Validity Period or any extension thereto provided by the Applicant, (i) has failed to sign the contract agreement, or (ii) has failed to furnish the performance security, in accordance with the Instructions to Bidders ("ITB") of the Beneficiary's bidding document.

This guarantee will expire: (a) if the Applicant is the successful Bidder, upon our receipt of copies of the Contract agreement signed by the Applicant and the performance security issued to the Beneficiary in relation to such Contract agreement; or (b) if the Applicant is not the successful Bidder, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Bidding process; or (ii)twenty-eight days after the end of the Bid Validity Period.

Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

_____

[Signature(s)]

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.

Manufacturer's Authorization

[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. Thisletter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer. The Bidder shall include it in its Bid, if so indicated in the ***BDS.****]*

Date: *[insert date (as day, month and year) of Bid submission]*
RFB No.: *[insert number of RFB process]*
Alternative No.: *[insert identification No if this is a Bid for an alternative]*

To: *[insert complete name of Purchaser]*

WHEREAS

We *[insert complete name of Manufacturer]*, who are official manufacturers of*[insert type of goods manufactured]*, having factories at [insert full address of Manufacturer's factories], do hereby authorize *[insert complete name of Bidder]* to submit a Bid the purpose of which is to provide the following Goods, manufactured by us *[insert name and or brief description of the Goods]*, and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 28 of the General Conditions of Contract, with respect to the Goods offered by the above firm.

Signed: *[insert signature(s) of authorized representative(s) of the Manufacturer]*

Name: *[insert complete name(s) of authorized representative(s) of the Manufacturer]*

Title: *[insert title]*

Dated on _____ day of _____, _____ *[insert date of signing]*

(i) *Performa FOR PERFORMANCE Statement*

[Please see ITB Clause 36.2 and Section III-Evaluation and Qualification Criteria]

Proforma for Performance Statement (for a period of last three/five years)

Bid No. _____ Date of opening _____ Time _____ Hours

Name of the Firm _____

Order placed by (full address of Purchaser)	Order No. and date	Description and quantity of ordered equipment	Value of order	Date of completion of delivery		Remarks indicating reasons for late delivery, if any	Has the equipment been satisfactorily functioning? (Attach a certificate from the Purchaser/Consignee)
				As per contract	Actual		
1	2	3	4	5	6	7	8

Signature and seal of the Bidder _____
_____

Section V –Not Applicable

Section VI–Not Used

PART 2 – Supply Requirements

Section VII - Schedule of Requirements

Contents

1. List of Goods and Delivery Schedule

Line Item N°	Description of Goods	Quantity	Physical unit	Final (Project Site) Destination as specified in BDS	Delivery (as per Incoterms) Date		
					Earliest Delivery Date	Latest Delivery Date	Bidder's offered Delivery date [*to be provided by the Bidder*]
[insert item No]	*[insert description of Goods]*	*[insert quantity of item to be supplied]*	*[insert physical unit for the quantity]*	*[insert place of Delivery]*	*[insert the number of days following the date of effectiveness the Contract]*	*[insert the number of days following the date of effectiveness the Contract]*	*[insert the number of days following the date of effectiveness the Contract]*
1	Equipments For Establishment Of Quality Control And Analytical Laboratory		Nos.	BRDC office as per BDS	Within 10 weeks	Within 12 weeks	

2. List of Related Services and Completion Schedule

Service	Description of Service	Quantity[1]	Physical Unit	Place where Services shall be performed*	Final Completion Date(s) of Services
[insert Service No]	*[insert description of Related Services]*	*[insert quantity of items to be supplied]*	*[insert physical unit for the items]*	*[insert name of the Place]*	*[insert required Completion Date(s)]*
1	*Performance or supervision of the on-site installation of the supplied Goods including and commissioning.*	181	Nos.	BRDC	
2	*Furnishing of detailed operations and maintenance manual for each appropriate unit of supplied Goods.*	181	Nos.	BRDC	
3	*Operation & Annual Maintenance of equipment for 5 years from the date of installation and acceptance including warranty of three years.*	181	Nos.	BRDC	
4	*Training of at least 5 technical staff at the location*	181	Nos.	BRDC	

3. EQUIPMENT

A. List of Equipment

LIST OF EQUIPMENTS FOR ESTABLISHMENT OF QUALITY CONTROL AND ANALYTICAL LABORATORY		
I. Pesticide Residue, Soil, Water and Nutritional Profile Testing Laboratory		
Sl. No.	**Equipment**	**Qty**
1	Atomic Absorption Spectrophotometer	1
2	Automated Nitrogen evaporators (N-Vap)	1
3	Automated Solid phase extractor	1
4	Butyro Refractometer Reading System with temperature control	1
5	BOD Incubator	1
6	BOD Analyzer	1
7	Centrifuge-Micro	1
8	Clean bench systems Biosafety cabinets	1
9	Clavenger Apparatus	1
10	COD Digestion Unit	1
11	Conductivity Meter- Bench top	1
12	Deep Freezer -40	1
13	Electronic Balance	1
14	Electronic pH meter	3
15	Flame Photometer	1
16	Fully automated Fiber analyser	1
17	Fully automated Kjeldahl system	1
18	High speed floor model centrifuge	1
19	Hot air Oven	1
20	Multimode ELISA reader and plate washer	1
21	Gas Chromatography	1
22	Germination Chamber	1
23	High Speed Blender	1
24	Liquid chromatography	1
25	Low Volume Nitrogen Evaporator	1
26	Spectrofluorometer	1
27	Solid Phase Extractor Manifold	1
28	Table top microfuge (Refrigerated)	1
29	Kuderna-Danish Concentrator with Snyder and Micro-snyder Columns	1
30	Kjeldahl for Nitrogen	1

31	Soxhlet Apparatus	1
32	Tintometer	1
33	Viscometer	1
34	Video Microscope	1
35	Vacuum Dessicator	1
36	Water purification system (Element analysis grade)	1
37	Digital Incubator	1
38	Variable Volume Micropipette	10
39	Variable Volume Macropipette	10
40	Ultrasonic Waterbath	1
41	Electric Bunsen Burner with energy regulator	4
42	Dessicator (300MM)	2
43	Fume Exhaust Hood	1
44	High Performance Liquid Chromatography(HPLC)	1
45	Heating Mantle with Energy Regulator (500 ml)	2
46	Hot Plate with Energy Regulator (Temperature range 100^{o}C)	2
47	Refrigerator (264 L; 3-80^{o}C)	2
48	Digital Cyclomixer	2
49	Standard Weight	1
50	Vacuum Pressure Pump	1
51	Weighing Balance	1
52	Analytical Balances (0.01, 0.001 and 0.0001g accuracy)	2
53	Auto pipettes - (1 - 5ml Range)	2
54	Bottle dispensers	5
55	Centrifuges	1
56	Desiccators	5
57	Frost free Double Door Refrigerators	1
58	Hand Held Refractometer	5
59	Heating Mantles	1
60	Hot plate cum stirrers	2
61	Incubators 37 °C	1
62	Laboratory Blender	1
63	Magnetic Stirrer	1
64	Muffle Furnace – 450°C	2
65	Oven – Moisture -100°C for glassware drying	1
66	Sample Shakers	1
67	Rotatory Vacuum Evaporator	1
68	RT-PCR	1
69	Solvent Dispensers - Organic & Acids –	2
70	TDS meter	1
71	Vortex Mixers	2
72	Waring Blender/grinding mill	2

73	Water Bath Shaker	1
74	Gel doc system& Electrophoretic unit	1
75	UV-Visible Spectrophotometer	3
76	µC Turbidity Meter	1
77	Inductively Coupled Plasma- Mass Spectrometer	1
78	Gas Chromatography-Mass Spectrometer/MS	1
79	Liquid Chromatography-Mass Spectrometer/MS	1
80	Microwave Sample Digester	2
81	UPLC-MS/MS	1

II. Microbiology Laboratory		
1	Anaerobic Jars	10
2	Analytical Balance (Macro)	2
3	Vertical Autoclave	4
4	Automated Culture Media Preparator with pourer stacker	1
5	Automated glassware washer	1
6	Binocular Microscope	1
7	Bio Safety Cabinet Class II Type B2 (Total Exhaust)	1
8	BOD Incubator (Fungi, Bacteria, Mycorrhiza)	3
9	Carbon di oxide incubator	1
	Colony Counter	1
	Digital pH Meter	1
11	Frost Free Double door (side by side) Refrigerator	2
12	Fumigator	1
13	Hot Air Oven	1
14	Howard Mold Counter	10
15	Laminar Air flow	2
16	Micro Filtration Assembly	1
18	Micropipettes	6
19	Orbital shaker	1
20	Refrigerated Centrifuge	1
21	Upright Frost Free Vertical Deep Freezer (-25 °C)	1
22	UV Viewing Chamber	1
23	Ultrapure Water Purification System	1
Nos. of Items		181

B. Technical Specifications

Procurement Of Equipments For Establishment Of Quality Control And Analytical Laboratory

TERM OF REFERENCES FOR SUPPLY AND MAINTENANCE OF EQUIPMENTS

General Requirements:

- The system must be factory tested and a certificate should be provided.
- The system should have a 10yearvalueguarantee.
- A minimumofthreeyearswarrantyshouldbeprovided.Anyadditionalyearsofwarrantymay also be given.
- The system should be installed by the company professionals at our site. A thorough technicaltraininginanalyzingandtroubleshootingshouldbegivenbythetechnicalprofessionals.
- All accessories for the operation and maintenance of the instruments should be providedtomeetourneedsforatleast5years.
- A list of references in India, where similar systems have been installed, must be providedand this will be taken very seriously while making the decision. Your post sales servicefeedbackwill be certainly a deciding factor.
- The Institute shall provide partitioned cabin (Aluminum frame, glass, ACP partition, etc.)for instrument as required; other specifications for site preparation are to be fulfilled by the vendoronlyforsuccessful installation. Thevendors mayvisit thesitefortentative expenditure.

Itemsforinstallationrequirement:

- All necessary pre-installation requisites/consumables including chemicals, acids, gases and standards for complete installation and demonstration of the instrument need to be supplied.
- Auto-tuning/Calibration standards to be provided.
- Vibrationfreetablewithgranitetoptokeepthesystemandoneseparatecomputertabletokeep the PC and printer

Warranty:

- Threeyearsofcomprehensivewarrantyfromthedateofinstallation without any additional cost to the purchaser. The warranty should cover the equipment andother itemsincludingallaccessoriesandspareparts. Warrantyshouldbe frommanufacturer with OEM part number. All accessories/spare parts shall be warranty fromOEM with part number within a period of 3 years after commission, any accessory/sparepartisprovedtobedefectivethensuchproductshallbereplacedbythemanufacturer/supplier. Suchreplacementshallbesoleobligationofthemanufacturer/supplier, including payment of charges for freight delivery, custom duty andtransportation, if any. In case of breakdown during the warranty period, a competentService Engineer of the supplier should make as many visits as are required to rectify the problem and replace the faulty parts, without any liability of cost. Service response timemust be less than **3-5 working** days for small issues and less than 10-15 working days formajorbreakdown/hardwarechangeover; otherwise thewarrantyperiodshallautomatically be extended by the time taken to rectify the defects. Also, one maintenance&annualcalibrationvisitseveryyear(withinthewarrantyperiod)byauthorizedservice engineersarerequired.

1)Non-technical requirements:

- The supplier must have sold, installed and provided support for 03 specified systemsacross India.A list withcorrespondingdetails must beprovided.
- Specifications claimed must be supported by published OEM literature/document fromthecompany.

- Thesupplieroftheinstrumentmustconfirminwritingthatsparesfortheentireinstrument (including additional units and accessories) will be available for at least aperiod10yearsafterthemodelofequipmentsuppliedhasbeenphasedout.Forfrequently required spares, there should be adequate inventory available with the Indianagencyof thecompany.
- Supplier must have proven capability and trained manpower to troubleshoot equipmentbothin terms of hardwareand software.
- Biddersmustfurnishdocumentaryevidence(client'scertificate)insupportofsatisfactoryoperation ofthe instrument.
- Suitableandessentialtoolkitistobesuppliedwiththeinstrumentforrequiredmaintenance.
- Accessories that are needed for the operation of the instrument, but not mentioned in theTechnicalSpecificationslist, must be quoted bythevendor.
- The instrument should be installed and commissioned at site. Site requirements must beprovided by the supplier. Complete technical details of pre-installation requirements shouldbefurnishedalongwiththetechnicalbid.BRDC, Shillongwillonlyprovidetheinstallation room and required electrical outlets. Vendor must supply all other infrastructureaccessories, facilities and services required for successful installation and operation of theinstrument.Vendormayconduct site surveypriorto installation at no additionalcost.
- Training: The supplier must provide one-weekcomprehensive trainingonoperation,applicationandmaintenanceoftheinstrument afterinstallation for 5 technical staff at BRDC, Shillong

SPECIFICATIONSOFEQUIPMENTSFORRESIDUALTESTING,SOIL AND WATER ANALYSES

SPECIFICATIONS OF EQUIPMENTS FOR RESIDUAL TESTING, SOIL AND WATER ANALYSES

1. Atomic Absorption Spectrophotometer (Fully External PC-controlled True Double Beam Atomic Absorption spectrometer system).

Sl. No.	Main component	Detailed specifications
1.	Optics	Narrow beam optics. Optics should be fully sealed and mirrors quartz overcoated.
2.	Wavelength range	185-900 nm.
3.	Monochromator	Focal length 250 mm or more. Preferably Czerny-Turner or equivalent monochromator with computer-controlled wavelength selection.
4.	Slits	Automated slit selection. Settings0.2, 0.5 and 1.0 nm plus one reduced height slit of 0.5 nm.
5.	Grating	Holographic blazed gratingwith line density 1200 lines/mm or more.
6.	Dispersion	better than 2.3 nm/mm.
7.	Detector	Photomultiplier Tube or Solid state covering full wavelength range.
8.	Background corrector	High intensity deuterium background corrector. Range 185-425 nm to 2.3 Abs.
9.	Lamp System	Fully software controlled 4 lampfixed positions or more.Fast sequential selection of lamps through software is preferable for less run time and gas consumables.
10.	Gas control	Fully programmable gas control system. Rapid regulation for gases. PC controlled gas flows. Automatic oxidant changeover facility should be there.
11.	Safety system	There should be adequate safety measurement such as separate ignite/flame-off buttons, internal gas connections made automatically, flame shields and protection against heat and UV radiation. External adjustment of all burner and spray chamber controls. Violation of any safety interlock should prevent flame ignition or should extinguish existing flame.
12.	Flame atomization system	Spray chamber should be fluorinated high density polyethylene design for aqueous and organic solutions.
13.	Impact beads	Should be externally adjustable.
14.	Nebulizer	Adjustable nebulizer with inert platinum/iridium capillary and PEEK venturi for corrosion resistance.
15.	Burners	Should be of inert material. Air/acetylene and nitrous oxide/acetylene burner to be offered.

		Should provide external burner rotation. Should have facility for PC controlled burner adjuster with auto setting of burner height.
16.	Performance	>0.9 absorbance with precision of <0.5% RSD from ten 5 sec. integrations for5 mg/L Cu solution.
17.	Software	Windowsbased external PC with mouse or keyboard control. Measurement modes: Absorption or flame emission using PROMT, Pre-read delay variable from 0-999 secs. Up to 20 replicates with read time from 0.1-30 secs. Different number of replicates can be selected for samples and standards.Sampling modes: Manual or auto sampling with flame, furnace and vapor operation. On-line cookbook, Data handling for signals (when selected), method and sequence parameters stored in the worksheet, Data import/export facility, LIMS support facility and Context sensitive help with extensive index, graphics, videos and cross referencing should be available.
18.	Vapour Generation Accessory	It should be modular continuous flow or Flow injection type Vapor Generation Accessory for trace level determination of elements like Hg, As, Se etc. at µg/L concentrations. Typical precision should be 1-2% RSD.
19.	Lamps	Hollow cathode lamps: coded Single and multi-element hollow cathode lamps for analysis of various elements. The lamps should have. guaranteed 5000 mA hour of usage time.
20.	Utilities/local supply	PC/Printer. Should be quoted with necessary gas cylinders, regulators, exhaust hood, compressor.
21.	Warranty	1+ 2 years.

2. Automated Nitrogen evaporators (N-Vap)

Sl.No.	Main Components	Detailed Specifications
1.	Waterbath Temperature	Ambient to 80C
2.	Timer Range	1minute to indefinite
3.	Gas supply requirements	Min. Inlet pressure 70psi and Max. Inlet pressure 100 psi
4.	Gas Flow	150 LPM
5.	Power Requirement	230 VAC at 50 Hz
6.	Capacity	80-100 litres
7.	Technology	Vortex

3. Automated Solid phase extractor

Sl.No.	Main Components	Detailed Specifications
1.	Capacity	700 litres
2.	Pipetting Head	4 or 8 channel
3.	Reagent Drop	up to 8
4.	Supported Cartridges	1, 3 or 6mL cartridges or 96 SPE cartridge plate
5.	Pressure Module	4 channel positive pressure module and/or vacuum manifold (negative pressure)
6.	Nitrogen Dryer	24 or 96 channels
7.	Shaker Heater (2400rpm, RT to 90°C	Optional

4. Butyro Refractometer Reading System with temperature control

Sl.No.	Main Components	Detailed Specifications
1	Range	Brix: 0.0 to 32.0%
2	Accuracy	±0.1%
3	Temperature compensation	5 to 40°C
4	Power Supply	006P dry battery (9V)
5	Dimensions & Weight	17×9×4cm, 270g

5. BOD incubator:

Sl.No.	Main Components	Detailed Specifications
1.	Capacity	340L
2.	External Chamber	MS / SS 304 / SS 316
3.	Internal Chamber	Stainless Steel 304 (Optional SS 316)
4.	Temperature Range	2°C to 60°C
5.	Temperature Uniformity	+/- 0.5°C at 20°C
6.	Display	Backlit LED Display
7.	Temperature control	Microprocessor P.I.D controller, On / Off compressor control, PT 100 sensor
8.	Door	Solid insulated door (with glass & without glass) w/ lock
9.	Shelves	Stainless steel Shelves (2 to 5), removable
10.	Refrigerant	R134a / CFC Free
11.	Power	220 Volts

6. BOD Analyzer

Sl.No.	Main Components	Detailed Specifications
1.	Phase	Gas phase
2.	Temperature Range	2C to 40
3.	Comply Range	0-4000 mg/l
4.	Dimension	375 x 181 x 230 mm including stirring unit
5.	No Of Usb Ports	USB host port (USB stick) USB device port (computer) SD card

7. High Speed Refrigerated Centrifuges (Floor Model):

Sl.No.	Main Components	Detailed Specifications
1.	Maximum speed (rpm)	26,000 to 29,000
2.	Maximum RCF (x g)	70,000 to 100,000
3.	Maximum capacity (tubes x	6 x 1000 in swing bucket or fixed angle

	ml)	
4.	Drive motor	High-torque brushless high-frequency motor, Imbalance tolerant drive
5.	Temperature range	–10 to +40
6.	Controls	Microprocessor based, Touch-screen interface (can be used with gloved hand). Memory-based programmed operation 30 programmed operations possible.
7.	Acceleration/ deceleration profile	Nine stage variable acceleration. Nine stage braked deceleration, plus free deceleration
8.	Refrigeration system	CFC/ HCFC free with 5-year non-prorated warranty
9.	Run Time	99hrs; Hold
10.	Programmability	30 programs or more, Actual run timer
11.	Temp. Control Accuracy	± 2°C of set temperature
12.	Speed control accuracy	± 20 rpm
13.	Speed control range	100 to 26,000 rpm or 500 to 29,000rpm
14.	Ambient temperature for operation	2°C to 40 °C
15.	Power	200-240 VAC, 50 Hz, 30 A, single phase
16.	Required Rotors	1. Fixed angle rotor 8x50ml RPM 25,000 and above and RCF 75,000 x g or above with Polyallomer 50ml tubes and adapter for 10 ml along with tubes (minimum 50 tubes of each volume should be quoted in main offer) 2. Swing Bucket rotor 4x500ml RPM 5,300 or above and RCF 6,800 x g or above with adapters for 50ml conical tubes, 15ml conical tubes and MTP's carrier.
17.	Optional Rotor	Fixed angle rotor 6x1000ml RPM 8,000 and above and RCF 15,900xg and above should be quoted along with PC bottles.
18.	The centrifuge must provide automatic and instant rotor identification, completed upon installation of the rotor into the centrifuge, before the run is started and a fast, simple, and secure mechanism to automatically lock the rotor onto the drive adapter, eliminating the need for a tool or to hand tighten. The centrifuge must have a vacuum system, with a HEPA filter option, which only operates when needed and can be user selected for high performance or for energy saving. The centrifuge must be able to run without the use of a partial vacuum to protect sensitive samples in micro-plates, as well as other tubes and bottles.	

8. Biosafety Cabinet:

Technical Specifications for Biological Safety Cabinet based on Class II Type B-2 for BSL-III work

Body & Dimension

1. Main body should be made of stainless steel [(304 grade)- Heavy gauge- 16 G]
2. Table top and working zone should be made of stainless steel [(304 grade)- Heavy gauge- 14G &16 G]
3. Table top should be in two parts:

a) Front perforated portion 4" in size

b) Non perforated working zone: Table sunken type (trough type) for spillage management thatcan be lifted easily for cleaning below the table.

4. Work Area should be approximately 900 or 1200 x 600 x 600 mm (3 – 4 feet) in size with shutteropening of 489 mm
5. Overall Size of the cabinet should be approximately 1000 or 1300 x 825 x 2450 mm.

6. Air Flow should be vertical down flow with 100% exhaust.
7. Cleanliness level should be less than 3.5 particles/ litre of 0.5 µm and larger (ISO14644-1).
8. Noise Level should be less than 65 db.
9. Vibration level: Less than 2.3 µm.
10. Average air flow should be 90±20 fpm (down flow).

Standard Accessories:

1. HEPA filters should be MINIPLEAT with 99.99% efficiency for 0.3 micron with integral metal guards & filter frame gaskets and manufactured in class 1000 super clean air-conditioned environment for longer life.
2. Air pressurization system should be statically and dynamically balanced, fitted with special vibration reducing system to suit low noise and vibrations.
3. Front door should be made of polycarbonate/ toughened glass (6 mm), adjustable as per lab requirement, vertical sliding (one piece with counter weight arrangement for fingertip control).
4. Side walls should be made of stainless steel [(304 grade) - Heavy gauge- 14 G].
5. Should have fluorescent light with low energy choke less to withstand larger fluctuations in voltage, should be placed outside working zone to avoid turbulence.
6. Should have support stand with levelling screws adjustable from 55-85 mm.
7. UV lamp should be in working zone (40 micro watts/ square cm at 254 nm or better) and placedso that the operator cannot see directly i.e., eyes should be always protected.
8. Universal Service fittings for gas and air should be provided with gas burner along with gascylinder which can be refilled on requirement.
9. Should have Rehabitable pre filters should have efficiency of more than 80%.
10. Should have Switches & Electrical sockets outlets for 15/5 amp.
11. Should have Pressure Monitors like Magnehelic gauge are required to indicate pressure drop across HEPA filter.
12. Should have DOP Port
13. Should have current leakage circuit breaker
14. Should have air tight duct exhaust extension
15. Should have Contaminated plenum in negative pressure to prevent leakage into the environment. Exhaust blower should be placed outside at roof top level.
16. Exhaust blower should be capable for 100% exhaust interconnected with supply air blower; system should only start when the negative pressure is developed.
17. Special provisions should be there, If, by chance the exhaust blower is not working properly, the operator will get a buzzer.
18. Should have Audible alarm to warn the operator if the window is raised above the recommended height of 203 mm (8 inches)
19. Should have Air short circuiting or the bye pass arrangement: By chance there is ingress of fresh air from the top of front shutter, this ingress should not percolate into the working zone: but will be short circuited to return duct at the back. Safety suction points near the upper portion of the front shutter transfer short circuit dirty air into the exhaust/ return duct.
20. Should have Adjustable zero leak proof damper at supply air intake & exhaust ducting.
21. Should have Special provision for system which gives alarm to stop supply air in case the negative pressure goes beyond certain limit to stop contamination egress to laboratory.
22. Should have Spillage trough below the working table of 16G heavy duty stainless steel. This trough should have drain cock.
23. Back holes should be there on vertical walls to provide more work area on table top.
24. Should have Exhaust Ducting at the roof top (approx. 30 feet) from the cabinet site.

Other Features:

1. Installation, validation/ performance demonstration should be carried out at site with all ultra-modern facilities like Velocity test, Laser based particle test etc.
2. The cabinet should be based on NSF 49/ ANSI 49, ETL, CE certification.
3. Suitable power supply/ UPS should be provided to continue, if the electricity goes off during the work.

9. Clevenger Apparatus:

Sl.No.	Main Components	Detailed Specifications
1.	Glass	Heat resistant, Borosilicate Glass
2.	Flask	Round bottom flask: 5000ml & 1000ml
3.	Condenser	Liebig condenser with heating Mantle

10. COD Digestion Unit

Sl.No.	Main Components	Detailed Specifications
1.	Display	Digital 12 mm Rod LED
2.	Timer	Selectable 15,30,45,60,90 or 120 min with alarm
3.	Heater Rating (W)	750 Watts
4.	Sensor	PT-100
5.	Hole Size (mm)	40 mm dia c 80 mm depth
6.	Control	Digital electronic Temperature Controller
7.	Sample Volume (ml)	20 ml, Each
8.	Glass Tube (mm)	38 mm dia 15 nos (5x3 rows)
9.	Temperature Range	Above amb to 180 degC or higher
10.	Resolution	1deg C
11.	Dimension	500 W x 270 D x 210 mm H

11. Conductivity Meter (Bench-top & Portable)

Sl.No.	Main Components	Detailed Specifications
1.	Type of Conductivity meter	Portable
2.	pH Range	0 to 14 pH
3.	Environment	0 to 50 Deg C (32 to 122 Deg F); RH max 100%
4.	Dimensions	145 x 80 x 36 mm (5.7 x 3.1 x 1.4 Inch)
5.	Weight	230 g (8.1 oz.)
6.	pH Resolution	0.1 pH
7.	pH Accuracy	+/- 0.1 pH
8.	EC Range	0.00 to 6000 uS/cm
9.	EC Resolution	10 uS/cm
10.	TDS Range	0 to 3000 ppm (mg/L)
11.	TDS Resolution	10 ppm (mg/L)
12.	Temperature Range	0.0 to 70.0 Deg C

13.	Temperature Resolution	0.1 Deg C

12. Deep Freezers:

Sl.No.	Main Components	Detailed Specifications
1.	Rated power(w)	840
2.	Temperature(C)	-40° C ~ -86° C
3.	Volume(L)	838
4.	Interior material	304 stainless steel
5.	Compressor/Brand	2/SECOP
6.	Cooling Type	Direct cooling
7.	Power Supply (V/Hz)	220/50 ~ 60; 115/60
8.	Alarm	High/Low Temperature, Sensor error, Power failure, Door ajar

13. Electronic Balance (Micro):

Sl.No.	Main Components	Detailed Specifications
1.	Display	Back lit display with touch screen operation
2.	Weighing units	Various units of weight
3.	Maximum weighing capacity	20 to 30 gm.
4.	Minimum weighing capacity	0.001 mg (1µg)
5.	Tarring range	0 to -20-30gm
6.	Repeatability	1µg
7.	Linearity	1µg
8.	Setting time	5 seconds or better
9.	Calibration with internal weight	Push button calibration
10.	Sensitivity	1µg
11.	Size of weighing pan	25mm or larger
12.	Power	220 V AC, 50 HZ automatic shut off.

14. Electronic pH meter:

Sl.No.	Main Components	Detailed Specifications
1.	Display	Digital LED
2.	Range Resolution	0 -14.00 **pH**, 0 ± 1999 mv, 0.01 **pH**, 1mV
3.	Accuracy	± 0.01 **pH**, ± 1mV
4.	Temperature Compensation	Auto + Manual 0to100°C

15. Flame photometer

Sl.No.	Main Components	Detailed Specifications
1.	Model	381
2.	Range	Na: 0 – 100 ppm K : 0 – 100 ppm Ca: 15 – 100 ppm (Optional) Li: 10 – 100 ppm (Optional)
3.	Sensitivity	Na: 5 ppm K : 5 ppm Ca: 10 ppm (Optional) Li: 10 ppm (Optional)
4.	Accuracy	+ 2% upto 40 ppm, + 5% above 40 ppm
5.	Measurement System	One element at a time
6.	Readout	2½ Digit 7-Segment LED
7.	Ignition System	In-built electronic Ignition by press of switch
8.	Repeatability	+ 2 Counts
9.	Detector	Silicon Photodiode
10.	Filters	Narrow band interference glass filters
11.	Nebulizer	Black backelite, axial flow type
12.	Flame System	LPG & dry oil free air
13.	Warm-Up Time	10 minutes
14.	Power	230 V + 10% AC, 50 Hz
	Dimensions	375 x 245 x 220 mm (L x B x H) (Approx.)
	Weight	7.5 Kg (Approx.)
Compressor Unit		
a.	Air Supply	By oil free mini compressor unit with pressure regulator
b.	Combustion Gas	LPG controlled by precision regulator
c.	Power	230 V + 10% AC, 50 Hz
d.	Dimensions	290 x 255 x 210 mm (L x B x H) (Approx.)
e.	Weight	8 Kg (Approx.)

16. Fully automated Fiber Analyzer:

Sl.No.	Main Components	Detailed Specifications
1	Sample Specifications Sample Size	0.5 – 1.0 gram
2	Fiber Range:	0% - 100%
3	Samples per batch:	up to 24 Samples per day
4	Acid Detergent Fiber	= 144

5	Neutral Detergent Fiber	= 120
6	Crude Fiber	= 96
7	Dimensions:	18” w x 14.5” d x 23”h 16” w x 9” d x 20”h
8	Operating Temperature	100°C
9	Power Requirements	– 240V, 50/60 Hz 120–240V, 50/60 Hz

17. Kjeldahl System for Nitrogen

Sl.No.	Main Components	Detailed Specifications
1.	Model No	BST/KDU-6
2.	Units of test	6 tests
3.	Heater	Mantle type
4.	Flask capacities	300 ml / 500 ml
5.	Max. temperature	350°C
6.	Rating	200 watts
7.	Construction	MS powder coated
8.	Optional	- Glass ware - Clamps - Lead fume duct - Condenser rack
9.	Power supply	220 Volts 50Hz

18. High Speed Refrigerated Centrifuges (Floor Model):

Sl.No.	Main Components	Detailed Specifications
1.	Maximum speed (rpm)	26,000 to 29,000
2.	Maximum RCF (x g)	70,000 to 100,000
3.	Maximum capacity (tubes x ml)	6 x 1000 in swing bucket or fixed angle
4.	Drive motor	High-torque brushless high-frequency motor, Imbalance tolerant drive
5.	Temperature range	–10 to +40
6.	Controls	Microprocessor based, Touch-screen interface (can be used with gloved hand). Memory-based programmed operation 30 programmed operations possible.
7.	Acceleration/ deceleration profile	Nine stage variable acceleration. Nine stage braked deceleration, plus free deceleration
8.	Refrigeration system	CFC/ HCFC free with 5-year non-prorated warranty
9.	Run Time	99hrs; Hold
10.	Programmability	30 programs or more, Actual run timer
11.	Temp. Control Accuracy	± 2°C of set temperature
12.	Speed control accuracy	± 20 rpm

13.	Speed control range	100 to 26,000 rpm or 500 to 29,000rpm
14.	Ambient temperature for operation	2°C to 40 °C
15.	Power	200-240 VAC, 50 Hz, 30 A, single phase
16.	Required Rotors	3. Fixed angle rotor 8x50ml RPM 25,000 and above and RCF 75,000 x g or above with Polyallomer 50ml tubes and adapter for 10 ml along with tubes (minimum 50 tubes of each volume should be quoted in main offer) 4. Swing Bucket rotor 4x500ml RPM 5,300 or above and RCF 6,800 x g or above with adapters for 50ml conical tubes, 15ml conical tubes and MTP's carrier.
17.	Optional Rotor	Fixed angle rotor 6x1000ml RPM 8,000 and above and RCF 15,900xg and above should be quoted along with PC bottles.
18.	The centrifuge must provide automatic and instant rotor identification, completed upon installation of the rotor into the centrifuge, before the run is started and a fast, simple, and secure mechanism to automatically lock the rotor onto the drive adapter, eliminating the need for a tool or to hand tighten. The centrifuge must have a vacuum system, with a HEPA filter option, which only operates when needed and can be user selected for high performance or for energy saving. The centrifuge must be able to run without the use of a partial vacuum to protect sensitive samples in micro-plates, as well as other tubes and bottles.	

19. Hot air Oven:

Sl.No.	Main Components	Detailed Specifications
1.	Temperature Range	5°C above ambient to 250°C maximum with digital temperature controller
2.	Door	Solid doors w/ silicone rubber gasket & lock
3.	Shelves	2 – 3 Stainless steel shelves (Removable)
4.	Air Circulation	Forced air circulation
5.	Power Supply	220 Volts
6.	Fan	Noiseless

20. Multimode ELISA reader and plate washer

Specifications for Microplate (ELISA)

Reader

- Should have minimum wavelength range of 400–750 nm and photometric range of 0.0–3.5 OD
- Should have linearity of ≤1.0% from 0.0–2.0 OD; ≤2.0% from 0.0–3.0 OD; accuracy of ≤1.0% or 0.010 from 0.000–3.000 OD at 490 nm; precision of 1.0% or 0.005 OD from 0.0–2.0 OD; 1.5% from 2.0–3.0 OD and resolution of 0.001 OD
- Should have minimum 8 filter wheel capacity with 415, 450, 490, 595, 655, and 750 nm included filters
- Should have minimum 3 speed plate shaking with adjustable duration of 0–999 sec
- Read time should not be more than 6 sec at single wavelength or 10 sec at dual wavelengths
- Should have onboard graphical thermal printer and USB2 interface with PC or Mac data stations for data output
- Should be able to store data for over sixty assay protocols
- System should come with a comprehensive software package allowing colorimetric and turbidimetric analyses, as well as report analysis for raw data, absorbance, limit, matrix, normalization, and curve fit
- Software should have the functionality of flexible template creation for any microplate format up to 1,536 wells
- Software should be either license free or license for minimum 5 systems should be provided

Specifications for Microplate washer

- Automatic washer compatible with strips and 96-well microplates that have flat-, U-, or V- bottom wells.
- Programmable needle positions (horizontal or vertical) to an accuracy of 0.1 mm for bottom washing, crosswise aspiration, and overflow washing.
- Dispensing speed control
- A plate shaking option to help minimize bubbles and adherence of liquid to well sides.
- Wash bottle sensor to detect high waste liquid levels
- Up to 75 programmable washing sequences
- Easily removable 8- or 12-way manifolds
- Easily accessible manifold interior for maintenance
- Removable and autoclavable plate carrier
- An aerosol protection cover
- Integrated vacuum and dispensing pumps to ensure accurate and quiet washing and to eliminate the need for external pumps.
- Residual well volume should be < 6 µl
- Wash bottle volume should be 2000 ml

- Soak time in strip mode 0-9.9 sec and in plate mode 0-59 minutes.
- Should come with 8-way manifold and 12-way manifold should be quoted in optional.
- On-board software should be capable of storing up to 110 wash protocols.
- Operating temperature 15-40 °C.
- Dimensions (WxDxH) not more than 35x43x20 cm
- Both instruments should be of from same manufacturer.

21. Gas Chromatography:

Sr. No.	Main component	Detailed specifications
1.	Gas Chromatography-Mass Spectrometer	GC with original licensed windows-based software and Split-Spitless capillary inlet along with one 15 vials liquid auto sampler. GC must be capable to accommodate at least two detectors & two injectors in working conditions simultaneously. Minimum retention time repeatability <0.06 % and Peak area repeatability <2 %must be there with the system.
2.	Column Oven	Capable of housing at least two columns; operating temperature range: Up to 400 ° or more. Temperature Programming Ramps: 20 or more. Temperature setpoint resolution 0.1-degree C or more.
3.	Pneumatics	System must have pneumatic Electronic Flow Control for all inlets& detectors. Retention time locking facility should be quoted along with the GC system.
4.	Split Split-less Capillary Inlet	Split/split less capillary port Temperature: 400 °C or more Fully EPC Split ratio: 6000: 1 or more Pressure setting range 0–100 psi
5.	Auto Injection facility	Injection range up to 100 ul. RSD of better than 0.3% RSD area reproducibility Vial capacity should be 15 or more.
6.	Software	Original window-based software with license
7.	FID	Maximum operating temperature 425 °C or better MDL <3 pg carbon/s as tridecane or better Linear dynamic range $>10^7$ or better Maximum data acquisition rate 450 Hz or better Full range digital data path enables peaks to be quantified over the entire 10^7concentration range in a single run.
8.	TCD	Maximum operating temperature 400 °C MDL <800 pg tridecane/mL or better Linear dynamic range 10^5
9.	Consumables	Vials and Caps- 5000 EI Filament-1 Liner- 10 each for split and split-less Ferrules- 10 Column nut- 10 Septa- 100 Glass wool- 10 Auto sampler syringe- 4
10.	Computer	Compatible Computer & LaserJet Printer
11.	Gas Cylinder	Zero Air, H2 and N2 Gas Cylinder, regulators with Gas purification panel.

22. Germination chamber:

Sl.No.	Main Components	Detailed Specifications

1.	Material	Stainless Steel
2.	Temperature	5degreeC to 60degreeC -1degreeC
3.	Seed germination models	5o c to 60o c
4.	Power	230 Volts single phase

23. High Speed Blenders:

Sl.No.	Main Components	Detailed Specifications
1.	Capacity	5 Kg
2.	Speed	360 rpm
3.	Performance	Heavy duty, electrical

24. Liquid Chromatography:

Sl. No.	Main component	Detailed specifications
1	• System should be designed and manufactured under ISO-9001 and should comply with most of international regulatory, safety and electromagnetic compatibility requirement. The chromatography data system should be based on Microsoft Windows operating system for instrument control, data acquisition and data analysis.	
2	Liquid Chromatography	• Pump: Must be gradient pump with 11500 psi pressure or better. • Flow rate: Must be 0.001 - 5 mL/min in 0.001 mL increment or better • Flow precision: Must be less than 0.075% RSD • Flow accuracy: Must be better than 1% • Composition accuracy: 0.5% or better • Delay volume ≤ 360 µL or better. • The pump shall have a means within the method for th eon-line blending ofeluentstoaspecificpHbasedonexperimentalpHcalibrationfilesthatarecreated by the user.
3	Autosampler	• Auto sampler: Auto sampler must be capable of holding minimum 110 samples or more of 2ml vials. • Furthermore, Auto sampler must be having a cooler to control till 4 deg centigrade.
4	Column compartment	• Column Compartment: Suitable column compartment capable of holding up to 3 columns or more and temperatures up to 80 degrees or better
5	PDA/DAD Detector	• Programmable Photo Diode Array Detector. • Detector should have >1000 or more diodes array. • Wavelength range: 190-950 nm or better. • Wavelength repeatability: ± 0.1 nm. • Wavelength Accuracy: ± 1 nm. • Data Acquisition: Up to 110 Hz or more.
6	Column	• C-18 with sub-2-micron particle size packing material or equivalent • C-8 sub-2-micron particle size packing material or equivalent
7	Software:	Control software should be user friendly and should have all the features to fine-tune the Data in the analysis, which are required for calibration and quantification and validation of the methods. Facility for Automated solvent Blending, online pH, ionic strength &organic modifier blending from solvents must be present so as to attain a perfect pH without human intervention.
8	Computer & Printer	• A suitable PC with 16GB RAM compatible for the above instrument control and for post data analysis should be supplied along with the instruments. One Laser jet printer.
9	UPS	• Suitable 5 KVA online UPS with half an hour back up facility with 5 years warranty. • Suitable table for system in the lab
10	Warranty	• System should have 3 years warranty.

25. Low Volume Nitrogen Evaporator (N-Vap):

Sl.No.	Main Components	Detailed Specifications
1.	Microprocessor	Distillate control with adjustable Sensor, two-line Alpha numeric Digital LCD display
2.	Display	Auto sequence steps Execute in the view of flow diagram in Digital display PC interface RS 232 for data Transfer & data Export to excel
3.	Sensor	Auto Sensing of NO Water Condensation, Auto Steam generator with alarm
4.	Monitoring	Auto Monitoring & measuring of high temperature in the view of Direct Digital Display Measuring Temperature Display directly in the Digital Display Sensor For Auto Warning Signal & Safety Alarm to alert the user to control distillate temperature Auto Deactivation of Operation in case of user non availability Adjustable steam power from 5 to 100%, Auto online water saving mechanism Automatic Water level Monitoring System, Auto reagent Level Sensor with alarm for Reagents
5.	Steam Generator	Stainless steel non corrosive steam Generator, peristaltic pump for reagents addition
6.	Suction module	Suction module of waste residue should be door mounted for easy serviceability
7.	Control panel	Economic Control panel unit along with inbuilt temperature controller, timer, mother board and SMPS should be isolated in separate compartment to protect electronics from wet chemistry & acid/alkali process area
8.	Performance	Nitrogen level 0.1 to 200mg Nitrogen, Nitrogen Reproducibility ±0.1% RSD, Nitrogen Recovery >99.9%
9.	Electrical Requirement	220-230V/50HZ

26. Spectrofluorometer:

Sl No	Description	Specifications
01	Optics:	All-reflective for a wavelength independent focus with high brightness (small focus) at the sample
02	Source:	150 W CW Ozone-free Xenon arc lamp
03	Monochromators:	Czerny-Turner design with plane gratings for accurate focus at all wavelengths and minimum stray light
04	Spectral Coverage – Excitation:	230 nm – 1000 nm
05	Spectral Coverage – Emission:	200 nm – 870 nm
06	Filter Wheels:	Fully automated; included in both the excitation and emission monochromators
07	Bandpass – Excitation/Emission:	0* to 30 nm, continuously adjustable
08	Wavelength Accuracy – Excitation/Emission:	± 0.5 nm
09	Scan Speed – Excitation/Emission:	100 nm/s
10	Integration Time:	1 ms – 200 s
11	Emission Detector:	PMT-900, spectral coverage 185 nm – 900 nm, cooled and stabilised (Extended PMT, 185 nm - 980 nm available)

12	Reference Detector:	UV enhanced silicon photodiode
13	Transmission Detector:	UV enhanced silicon photodiode
14	Water Raman Signal:	≥400,000 cps at 397 nm emission, excitation 350 nm, 5 nm bandpass, 1 s integration time
15	Signal-Noise Ratio of Water Raman Signal:	SNRSQRT > 6000:1
16	Dimensions:	104 cm (w) x 59 cm (d) x 32 cm (h)
17	Weight:	kg

27. Solid Phase Extractor- SPE Manifolds:

Sl.No.	Main Components	Detailed Specifications
1.	Pump	Vacuum pump
2.	Valve	screw-type valves within each SPE port for precise flow control
3.	Bleed gauge	Screw-type solvent-resistant vacuum bleed gauge and valve for 1/4″ vacuum tubing
4.	Collection vessel rack	PP/PTFE collection vessel rack with autosampler vials; small scintillation vials (22.75 mm O.D. or better); 10 and 16mm test tubes; and 1, 2, 5, 10 and 20 mL volumetric flasks.
5.	Liner	Disposable liners
6.	Pumping Speed	30L/min or better
7.	Limit pressure	0.1Mbar

28. Table Top Microfuge

Sl.No.	Main Components	Detailed Specifications
1.	Maximum speed (rpm)	26,000 to 29,000
2.	Maximum RCF (x g)	70,000 to 100,000
3.	Maximum capacity (tubes x ml)	6 x 1000 in swing bucket or fixed angle
4.	Drive motor	High-torque brushless high-frequency motor, Imbalance tolerant drive
5.	Temperature range	–10 to +40
6.	Controls	Microprocessor based, Touch-screen interface (can be used with gloved hand). Memory-based programmed operation 30 programmed operations possible.
7.	Acceleration/ deceleration profile	Nine stage variable acceleration. Nine stage braked deceleration, plus free deceleration
8.	Refrigeration system	CFC/ HCFC free with 5-year non-prorated warranty
9.	Run Time	99hrs; Hold
10.	Programmability	30 programs or more, Actual run timer
11.	Temp. Control Accuracy	± 2°C of set temperature
12.	Speed control accuracy	± 20 rpm
13.	Speed control	100 to 26,000 rpm or 500 to 29,000rpm

	range	
14.	Ambient temperature for operation	2°C to 40 °C
15.	Power	200-240 VAC, 50 Hz, 30 A, single phase
16.	Required Rotors	5. Fixed angle rotor 8x50ml RPM 25,000 and above and RCF 75,000 x g or above with Polyallomer 50ml tubes and adapter for 10 ml along with tubes (minimum 50 tubes of each volume should be quoted in main offer) 6. Swing Bucket rotor 4x500ml RPM 5,300 or above and RCF 6,800 x g or above with adapters for 50ml conical tubes, 15ml conical tubes and MTP's carrier.
17.	Optional Rotor	Fixed angle rotor 6x1000ml RPM 8,000 and above and RCF 15,900xg and above should be quoted along with PC bottles.
18.	The centrifuge must provide automatic and instant rotor identification, completed upon installation of the rotor into the centrifuge, before the run is started and a fast, simple, and secure mechanism to automatically lock the rotor onto the drive adapter, eliminating the need for a tool or to hand tighten. The centrifuge must have a vacuum system, with a HEPA filter option, which only operates when needed and can be user selected for high performance or for energy saving. The centrifuge must be able to run without the use of a partial vacuum to protect sensitive samples in micro-plates, as well as other tubes and bottles.	

29. Kuderna-Danish (KD) Concentrator with both Snyder and micro- Snyder columns:

Sl.No.	Main Components	Detailed Specifications
1.	Capacity	10ml
2.	Type	Graduated Concentrator Tube
3.	Graduations	0 to 1mL/0.1mL, 2 to 10mL/1mL
4.	Standard Taper Joint	19/22
5.	Standard Taper Joint (top)	24/40

30. Kjeldahl for Nitrogen

Sl.No.	Main Components	Detailed Specifications
1.	Model No	BST/KDU-6
2.	Units of test	6 test
3.	Heater	Mantle type
4.	Flask capacities	300 ml / 500 ml
5.	Max. temperature	350°C
6.	Rating	200 watts
7.	Construction	MS powder coated
8.	Optional	- Glass ware - Clamps - Lead fume duct - Condenser rack
9.	Power supply	220 Volts 50Hz

31. Soxhlet apparatuses:

Sl.No.	Main Components	Detailed Specifications
1.	Size	Large

2.	Joint	ST/NS extractor bottom/top
3.	Extractor Volume	200-250 ml
4.	Flask Volume	300-500 ml

32. Tintometer:

Sl.No.	Main Components	Detailed Specifications
1.	Color Type	Transparent
2.	Wavelength Range	380 - 780 nm
3.	Wavelength Accuracy	0.2 nm
4.	Spectral Scope	< 15 nm
5.	Photometric Range	0 - 100 % T
6.	Photometric Linearity	± 0.01 % T
7.	Stray Light	< 0.01 % T
8.	Detector	Spectrometer
9.	Interfaces	USB RS 232
10.	Portability	Benchtop
11.	Touchscreen	Yes
12.	Input Voltage	110 VAC, 250 VAC, 60 W (24 V)
13.	Compliance CE	
14.	Languages User Interface	English
15.	Dimensions	301 x 152 x 331 mm
16.	Weight	5.16 kg

33. Viscometer:

Sl.No.	Main Components	Detailed Specifications
1.	Measurement principle	Rotational viscometer (Principle of Brookfield)
2.	Rotational speed	60RPM
3.	Accuracy	±2 %
4.	Reproducibility	±1 %
5.	Display indications	revolutions, measurement system, viscosity, percentage of the full-scale value, battery level Power supply 4 x AA batteries
6.	Operating conditions	+10 … +40 °C /

34. Video Microscope:

Sl.No.	Main Components	Detailed Specifications
1.	Optical system	Greenough
2.	Observation angle	45°
3.	Magnification range (standard)	0.75X--5X

4.	Zoom ratio	1:6.7
5	Eyepiece	N-WF, high eye-point 10X(Ø23), Diopter adjustable / N-WF 12.5X(Ø18), 15X(Ø16), 20X(Ø13) optional
6	Interpupillary adjustment	48mm-75mm
7	Height of eye point	405mm
8	Working distance (standard)	110mm
9	Weight	6.2 kg (head 1.4kg)
10	C-Mount adapter	Trinocular head only / 0.5X, 0.65X, 1X adapters available
11	Photo adapter	SY10 photo adapter 2.5X, 4X photo eyepiece available
12	Auxiliary ESD objectives	0.3X [WD = 301mm], 0.5X [WD = 191.8mm], 0.63X [WD = 142.7mm], 0.75X [WD = 128.6mm], 1.5X [WD = 56.3mm], 2.0X [WD = 38.6mm]
13	Max. working distance	301mm
14	Stand option	Stable pole stand & arm base stand available 3W LED incident & transmitted light with reflector design

35. Vacuum Desiccators:

Sl.No.	Main Components	Detailed Specifications
1.	Material	Polycarbonate, large interior volume, transparent with neoprene “O” ring
2.	Stopcock	With PTFE plug with ribbed knob

36. Ultrapure Water Purification System:

Sl.No.	Main Components	Detailed Specifications
1.	Performance	Should take at least 100 Micro Siemens of Water conductivity and should deliver ultra-pure product water by point of use dispenser with rocker arm, volumetric dispensing and auto shut off facility having i) Resistivity > 16 Megaohm-cm ii) Conductivity < 0.06 Micro-Siemens iii) TOC level < 10 ppb iv) Flow rate > 1 lit / min
2.	Catridges	• Separate feed water specific purification cartridge and application specific polishing cartridge • Dual wavelength (185 & 254nm) hot cathode, UV lamp with ballast and quartz sleeve placed in an electro polished housing.
3.	Membrane	Final filter 0.22-micron PVDF validated membrane. System should have option for producing Pyrogen/Rnase-free water with UF cartridge.
4.	Resistivity Meter	Built in coaxial resistivity meter with a cell constant of 0.01/cm and 0.1degree C accuracy thermistor
5.	Display	• Maintenance display for sanitization, exchange purification cartridges, activation of fast flush, depressurization, air purge • Control display showing product water resistivity / conductivity both compensated and non-compensated mode, product water temperature, product water resistivity greater or below set point

37. Digital Incubator:

Sl.No.	Technical Specification of Incubator
1	Should be sturdy rigid and having aesthetic look.
2	Construction and fabrication on fully automatic CNC machines for giving consistency in performance and aesthetic look.
3	High quality insulation between inner and outer wall.
4	Full length inner acrylic door with roller type latch for monitoring without disturbing inside temperature.
5	(Temperature range 350C above ambient to 600C with temperature accuracy ± 10C.) Temperature range ambient + 50 C above ambient to 600 C.
6	Power supply: 220V AC + 25%,47 TO 53Hz, Approx.400 Watt
7	Temperature should be controlled by best quality thermostatic control and digital display.
8	Inner chamber made of stainless steel (S. S. 304) and outer chamber M.S. with powder coating.
9	Inner dimension 45x45x45 cm.
10	Accessories: Suitable thermometer having 0.10 C
11	3 shelves Thermometer access hole to display inside temperature. Digital control and digital display with soak timer.

38. Variable Volume Micropipettes:

Specifications for Item No 1- Variable Volume Single channel pipette.0.1 – 2.5 µL (microliter)

a. Pipette should be able to pipet out variable volume of 0.1 – 2.5 µL(microliter) and not any single/ fixed volume in this range
b. It should have a single-channel for pipetting
c. Manual volume control should be present
d. Secondary calibration option for pipetting a measured volume of aqueous or viscous liquid
e. Four-digit counter should be present that indicates the selected volume
f. It should have a magnified shape at the volume dispensing display for better visibility
g. The plunger of the pipette should require low operating force to aspirate and dispense liquid, reducing user fatigue and thumb muscle activity
h. Low tip ejection force of ≤ 4 newtons
i. Spring-loaded tip cone for ease of connecting and ejecting pipette tips10.Fully autoclavable or decontamination and sterilization

Specifications for Item No 2- Variable Volume Single channel pipette.0.5– 10 µL (microliter)

a) Pipette should be able to pipet out variable volume of 0.5– 10 µL(microliter) and not any single/ fixed volume in this range
b) It should have a single-channel for pipetting
c) Manual volume control should be present
d) Secondary calibration option for pipetting a measured volume of aqueous or viscous liquid
e) Four-digit counter should be present that indicates the selected volume
f) It should have a magnified shape at the volume dispensing display for better visibility
g) The plunger of the pipette should require low operating force to aspirate and dispense liquid, reducing user fatigue and thumb muscle activity
h) Low tip ejection force of ≤4 newtons
i) Spring-loaded tip cone for ease of connecting and ejecting pipette tips10.Fully autoclavable for decontamination and sterilization

Specifications for Item No 3- Variable Volume Single channel pipette,10 – 100 µL (microliter)

a. Pipette should be able to pipet out variable volume of 10 – 100 µL(microliter) and not any single/ fixed volume in this range
b. It should have a single-channel for pipetting
c. Manual volume control should be present
d. Secondary calibration option for pipetting a measured volume of aqueous or viscous liquid
e. Four-digit counter should be present that indicates the selected volume
f. It should have a magnified shape at the volume dispensing display for better visibility
g. The plunger of the pipette should require low operating force to aspirate and dispense liquid, reducing user fatigue and thumb muscle activity
h. Low tip ejection force of ≤ 4 newtons
i. Spring-loaded tip cone for ease of connecting and ejecting pipette tips10.Fully autoclavable for decontamination and sterilization.

Specifications for Item No 4- Variable Volume Single channel pipette,100 – 1000 µL (microliter)

a. Pipette should be able to pipet out variable volume of 100 – 1000 µL(microliter) and not any single/ fixed volume in this range
b. It should have a single-channel for pipetting
c. Manual volume control should be present
d. Secondary calibration option for pipetting a measured volume of aqueous or viscous liquid
e. Four-digit counter should be present that indicates the selected volume
f. It should have a magnified shape at the volume dispensing display for better visibility
g. The plunger of the pipette should require low operating force to aspirate and dispense liquid, reducing user fatigue and thumb muscle activity
h. Low tip ejection force of ≤4 newtons
i. Spring-loaded tip cone for ease of connecting and ejecting pipette tips10.Fully autoclavable for decontamination and sterilization

39. Variable Volume Macropipettes:

Specifications for Item No 1- Variable Volume Single channel pipette,5 – 10 ML (milliliter)

1. Pipette should be able to pipet out variable volume of 100 – 1000 µL(microliter) and not any single/ fixed volume in this range
2. It should have a single-channel for pipetting
3. Manual volume control should be present
4. Secondary calibration option for pipetting a measured volume of aqueous or viscous liquid
5. Four-digit counter should be present that indicates the selected volume
6. It should have a magnified shape at the volume dispensing display for better visibility
7. The plunger of the pipette should require low operating force to aspirate and dispense liquid, reducing user fatigue and thumb muscle activity
8. Low tip ejection force of ≤4 newtons
9. Spring-loaded tip cone for ease of connecting and ejecting pipette tips10.Fully autoclavable for decontamination and sterilization

40. Ultrasonic WaterBaths:

Sl.No.	Main Components	Detailed Specifications
1.	Tank capacity	4 litres
2.	Control	Digital
3.	Ultrasonic frequency	40±3KHz
4.	Heating Temperature	Upto 80˚C
5.	Inner Tank material/Outer housing material	Stainless steel
6.	Power supply	220V

41. Electric Bunsen Burner with energy regulator:

Sl.No.	Main Components	Detailed Specifications
1.	Mains Input Supply Voltage	230V AC at 50/60Hz.
2.	Maximum Operating Temperature	800°C
3.	Case Construction	Stainless steel – Brushed finish.
4.	Heating Element Construction	Resistance coiled wire and ceramic coned former.

42. Dessicator (300MM):

Sl.No.	Main Components	Detailed Specifications
1.	Top Dome Material:	Polycarbonate
2.	Bottom Bowl Material:	Polypropylene
3.	Flange OD:	13.39 Inch (340mm)
4.	Flange ID:	11.81 Inch (300mm)
5	Plate OD:	11.42 Inch (290mm)
6	Total Height:	15.16 Inch (385mm)
7	Max Clearance from Plate:	10.83 Inch (275mm)
8	Lower Chamber Height:	3.70 Inch (94mm)

43. Fume Exhaust Hood:

Sl.No.	Main Components	Detailed Specifications
1.	Size	1500*850*2350, Standard
2.	Material	SS and MS
3.	Product type	Hoods
4.	Socket	Two socket outlets
5	Display	Digital

44. High Performance Liquid Chromatography System

Sl.	Main	Detailed specifications

No.	component	
1	• System should be designed and manufactured under ISO-9001 and should comply with most of international regulatory, safety and electromagnetic compatibility requirement. The chromatography data system should be based on Microsoft Windows operating system for instrument control, data acquisition and data analysis.	
2	Liquid Chromatography	• Pump: Must be gradient pump with 11500 psi pressure or better. • Flow rate: Must be 0.001 - 5 mL/min in 0.001 mL increment or better • Flow precision: Must be less than 0.075% RSD • Flow accuracy: Must be better than 1% • Composition accuracy: 0.5% or better • Delay volume ≤ 360 µL or better. • The pump shall have a means within the method for the on-line blending of eluents to a specific pH based on experimental pH calibration files that are created by the user.
3	Autosampler	• Auto sampler: Auto sampler must be capable of holding minimum 110 samples or more of 2ml vials. • Furthermore, Auto sampler must be having a cooler to control till 4 deg centigrade.
4	Column compartment	• Column Compartment: Suitable column compartment capable of holding up to 3 columns or more and temperatures up to 80 degrees or better
6	PDA/DAD Detector	• Programmable Photo Diode Array Detector. • Detector should have >1000 or more diodes array. • Wavelength range: 190-950 nm or better. • Wavelength repeatability: ± 0.1 nm. • Wavelength Accuracy: ± 1 nm. • Data Acquisition: Up to 110 Hz or more.
7	Column	• C-18 with sub-2-micron particle size packing material or equivalent • C-8 sub-2-micron particle size packing material or equivalent
8	Software:	Control software should be user friendly and should have all the features to fine-tune the Data in the analysis, which are required for calibration and quantification and validation of the methods. Facility for Automated solvent Blending, online pH, ionic strength &organic modifier blending from solvents must be present so as to attain a perfect pH without human intervention.
9	Computer & Printer	• A suitable PC with 16GB RAM compatible for the above instrument control and for post data analysis should be supplied along with the instruments. One Laser jet printer.
10	UPS	• Suitable 5 KVA online UPS with half an hour back up facility with 5 years warranty. • Suitable table for system in the lab
11	Warranty	• System should have 3 years warranty.
12	Delivery	• Vendors should quote final/complete cost to door delivery basis

45. Heating Mantle:

Sl.No.	Main Components	Detailed Specifications
1.	Heating Mantle Body	Made of Aluminium Alloy
2.	Heating Mantle Material	Glass Fibre Yarn
3.	Mantle Capacity	To hold standard Round Bottom Flasks upto 20000ml
4.	Temperature Range	Approx. 400°C
5	Heating Control	Electronic power regulator
6	Permissible Ambient Temperature	5 – 40°C

7	Permissible relative moisture	80%
8	IP Class	10

46. Hot Plate with Energy Regulator (Temperature range 100^{o}C)

Sl.No.	Main Components	Detailed Specifications
1.	Temperature control	hydraulic thermostat
2.	Protected thermometer	0 °C to 130 °C
3.	Hotplate surface	protected by chemically treated aluminium, with heating elements distributed throughout the hotplate's surface
4.	External case	Enamelled, resistant against corrosive chemicals.

47. Refrigerator (264 L; 3-80 ^{o}C)

Sl. no	Description	Technical Specifications
1	Minimum Grossstorage Capacity	310 to 330 ltrs
2	Model Type	Double door
3	Voltage Range at 40 °C	Capable of working on 220 volts + 12 % A.C 50 Hz
4	Power Source	AC , 220 Volts to , 50 Hz
5	Method of Defrostin g	Frost Free
6	Insulation	Puff / Maxi 2 / Polyurethane
7	Refrigerant Gas	CFC free
8	Compressor	Power saver compressor
9	Accessori es Required	Adjustable shelves , chiller Tray , Temperature controller, Auto lamp On/off feature , should besupplied with all standard accessories as per manufacturer catalog for the model supplied
10	Warranty	with 3 year Comprehensive Warranty
11	Stabilizer	Should be supplied with 0.5 KVA capacities CVT without any extra cost. The CVT will also carry 3years warranty.
12	Colours	Metallic Color

48. Digital Cyclomixer:

Sl.No .	Main Components	Detailed Specifications
1.	Power (W)	32
2.	Shaking	Orbital

	Movement	
3.	Orbital Diameter (mm)	4
4.	Motor Type	Shaded-Pole Motor
5.	Permissible ON time	100% power 30mins
6.	Speed range (rpm)	0-2500
7.	Run Type	Continuous / touch operation
8.	Dimensions (mm)	127 x 130 x 160
9.	Weight (kg)	2.8

49. Standard Weight (Macro-Weighing Machine):

Sl.No.	Main Components	Detailed Specifications
1.	Weight range	1 mg to 200g (complete range consisting of 23 pieces)
2.	OIML Accuracy Class	E2
3.	Construction	Solid single piece
4.	Material	Austenitic Stainless Steel
5.	Shape	1 mg to 500 mg – SS wire 1 g to 200 g – Cylindrical with knob
6.	Presentation	Set of weight packed in polished teakwood box lined with lint free velvet cloth and provided with Teflon tipped forceps and gloves
7.	Calibration certificate	Calibration certificate traceable to national / international agencies to be provided.

50. Vacuum Pressure Pump:

Sl.No.	Main Components	Detailed Specifications
1.	Vacuum Pump Type	Screw type hermetically sealed vacuum pump
2.	Nominal Pumping speed	600 m3/h or more at 10 mbar pressure
3.	Ultimate pressure	< 5x10-2 mbar
4.	Maximum inlet pressure	1 bar absolute - The pump shall be able to operate at this pressure for at least 30 minutes continuously.
5.	Inlet Connection	ISO 100
6.	Outlet Connection	ISO 63 / NW 50
7.	Permissible ambient temperature	+5°C to +50°C

8.	Maximum Noise level	Less than 70 dB at 1 meter distance
9.	Cooling arrangements	Water cooled
10.	Cooling water temperature	10°C to 30°C
11.	Electric Supply	380-460 V, 50 Hz, 3 phase
12.	Quantity	03 Nos.

51. Weighing Balance:

Sl.No.	Main Components	Detailed Specifications
1.	Material	Mild Steels
2.	Size	Different Size
3.	Weighing Capacity	1-10kg
4.	Accuracy	From 0.5 Gram To 5 Gram

52. Analytical Balances (0.01, 0.001 and 0.0001g accuracy):

Sl.No.	Main Components	Detailed Specifications
1.	Capacity	10-100g
2.	Adjustment/calibration	automatic internal calibration
3.	Working temperature:	+10° - +40°C
4.	Stabilization time	3.5 s
5.	Interface	2 × RS 232, USB-A, USB-B, Wi-Fi – option
6.	Display	Backlit LCD Display

53. Autopipettes - (1 - 5ml Range)

Variable Volume Single channel pipette,1– 5 ML (milliliter)

1. Pipette should be able to pipet out variable volume of 100 – 1000 µL(microliter) and notany single/ fixed volume in this range
2. It should have a single-channel for pipetting
3. Manual volume control should be present
4. Secondary calibration option for pipetting a measured volume of aqueous or viscous liquid
5. Four-digit counter should be present that indicates the selected volume
6. It should have a magnified shape at the volume dispensing display for better visibility
7. The plunger of the pipette should require low operating force to aspirate and dispense liquid, reducing user fatigue and thumb muscle activity
8. Low tip ejection force of ≤4 newtons
9. Spring-loaded tip cone for ease of connecting and ejecting pipette tips10.Fully autoclavable

54. Bottle Dispenser:

Three types of bottle-top dispensers are required as listed in the table below.

Type	ge of volumeto be dispensed (mL)	Volume increment (mL)	Accuracy (full scale)	Quantity
Analog, variable volumebottle-topdispenser type-1 (1-10 mL)	1-10	0.25 or less	≤ ±0.5%	4
Analog, variable volumebottle-topdispenser type-2 (10-50 mL)	10-50	1.00 or less	≤ ±0.5%	4
Analog, variable volumebottle-topdispenser type-3 (10-100 mL)	10-100	1.00 or less	≤ ±0.5%	2

The bottle-top dispensers should have the following features:

a. Safety features: Dispenser should have recirculation valve to ensure safety during dispensing. The end of the discharge tube should have a hinged cap to avoid dripping after dispensing.
b. Liquid properties: Dispensers should be able to work with liquids having vapor pressure up to 500 mbar, densityup to 2 kg/m^3 and viscosity up to 500 cP at room temperature.
c. Material compatibility: Dispensers must be compatible with concentrated acids (HNO_3, HCl, H_2SO_4, $H_3PO_4$and CH_3COOH).
d. Working temperature range: dispensers should be suitable to work in 20-40 ^{0}C temperature range.
e. Adapters for type-1 dispensers: 1-10 mL dispensers should be usable with GL 24 mm, GL 28 mm, GL 33 mm, GL 38 mm, S40 bottles. Each 1-10 mL dispenser must be supplied with suitable adapters to ensure this functionality.
f. Adapters for type-2 and type-3 dispensers: 10-50 mL and 10-100 mL dispensers should be usable with GL 33 mm, GL 38 mm, S40 bottles. Each 10-50 mL and 10-
100 mL dispenser must be supplied with suitable adapters to ensure this functionality.

55. Centrifuge:

Sl.No.	Main Components	Detailed Specifications
1.	Speed regulation range for centrifuge tubes	100-3000 rpm (1610 × g)
2.	Speed regulation range for microtitre plates	100-2000 rpm (560 × g)
3.	Setting resolution	100 rpm
4.	Digital time setting	1 - 90 min (increment 1 min)
5.	Timer sound signal	+
6.	Rotor imbalance diagnostics (automatic stop, “IMBALANCE” warning)	+
7.	Display	LCD, 2 x 16 signs
8.	Chamber diameter	335 mm
9.	Overall dimensions (W×D×H)	420 x 495 x 235 mm
10.	Weight	11.8 kg
11.	Nominal operating voltage	230 V, 50/60 Hz or 120 V, 50/60 Hz

56. Desiccators:

Sl.No.	Main Components	Detailed Specifications
1.	Top Dome Material:	Polycarbonate
2.	Bottom Bowl Material:	Polypropylene
3.	Flange OD:	13.39 Inch (340mm)
4.	Flange ID:	11.81 Inch (300mm)
5	Plate OD:	11.42 Inch (290mm)
6	Total Height:	15.16 Inch (385mm)
7	Max Clearance from Plate:	10.83 Inch (275mm)
8	Lower Chamber Height:	3.70 Inch (94mm)
9	Lower Chamber Diameter:	11.02 Inch (280mm)
10	Plate to Flange Height:	3.23 Inch (82mm)
11	Stopcock Length:	2.76 Inch (70mm)

57. Frost free Double Door Refrigerators

Sl. no	Description	Technical Specifications
1	Minimum Gross storage Capacity	310 to 330 ltrs
2	Model Type	Double door
3	Voltage Range at 40 °C	Capable of working on 220 volts ± 12 % A.C 50 Hz
4	Power Source	AC , 220 Volts to , 50 Hz
5	Method of Defrosting	Frost Free
6	Insulation	Puff / Maxi 2 / Polyurethane
7	Refrigerant Gas	CFC free
8	Compressor	Power saver compressor
9	Accessories Required	Adjustable shelves , chiller Tray , Temperature controller, Auto lamp On/off feature ,should besupplied with all standard accessories as per manufacturer catalog for the model supplied
10	Warranty	with 3 year Comprehensive Warranty
11	Stabilizer	Should be supplied with 0.5 KVA capacities CVT without any extra cost. The CVT will also carry 3years warranty.
12	Colours	Metallic Color

58. Hand Held Refractometer

Sl.No.	Main Components	Detailed Specifications
1.	Scale	Brix
2.	Measurement range	0–32 %Brix
3.	Measurement accuracy	±0.2 %Brix

4.	Application	Determination of sugar content in fruit, grapes, juices, vegetables, foods and cooling liquids

59. Heating Mantle with Energy Regulator (For Pesticide Residual Test):

Sl.No.	Main Components	Detailed Specifications
1.	Heating Mantle Body	: Made of Aluminium Alloy
2.	Heating Mantle Material	: Glass Fibre Yarn
3.	Mantle Capacity	: To hold standard Round Bottom Flasks upto 20000ml
4.	Temperature Range	: Approx. 400°C
5	Heating Control	: Electronic power regulator
6	Permissible Ambient Temperature	: 5 – 40°C
7	Permissible relative moisture	: 80%
8	IP Class	: 10

60. Hot Plate Cum Stirrer:

Sl.No.	Main Components	Detailed Specifications
1.	Temperature control	hydraulic thermostat
2.	Protected thermometer	0 °C to 130 °C
3.	Hotplate surface	protected by chemically treated aluminium, with heating elements distributed throughout the hotplate's surface
4.	External case	Enamelled, resistant against corrosive chemicals.

61. Incubator 37°C

Sl.No.	Main Components	Detailed Specifications
1.	Capacity	340L
2.	External Chamber	MS / SS 304 / SS 316
3.	Internal Chamber	Stainless Steel 304 (Optional SS 316)
4.	Temperature Range	2°C to 60°C
5.	Temperature Uniformity	+/- 0.5°C at 20°C
6.	Display	Backlit LED Display
7.	Temperature control	Microprocessor P.I.D controller, On / Off compressor control, PT 100 sensor
8.	Door	Solid insulated door (with glass & without glass) w/ lock
9.	Shelves	Stainless steel Shelves (2 to 5), removable
10.	Refrigerant	R134a / CFC Free
11.	Power	220 Volts

62. Laboratory Blender:

Sl.No	Main Components	Detailed Specifications

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1.	Make	Three Speed Kitchen Blender with a glass container of 1000 ml capacity
2.	Blender Jar	Mixi with 600 W motor covered.
3.	Speed Uniformity	uniform speed of rotation at every three speeds
4.	Maximum speed	Approx. 1500 rpm

63. Magnetic Stirrer

Sl.No.	Main Components	Detailed Specifications
1.	Speed control range	250-1250 RPM
2.	Max. stirring volume (water)	15 litres
3.	Plate temperature regulation range	+30°C...+330°C
4.	Temperature uniformity on the plate	±3°C
5.	Working plate heating time till 330°C	15 min
6.	Maximum continuous operation time	24 h
7.	Diameter of working plate	160 mm
8.	Working surface material	Aluminium alloy
9.	SR-1, attachable stand size	Ø 8 × 320 mm
10.	Length of magnetic stirring element	10–50 mm
11.	Max. stirring liquid viscosity	up to 1170 mPa.s
12.	Fault indication	Outputs sound signal and turns off the heating
13.	Overall dimensions (W×D×H)	190x270x100 mm
14.	Weight	2.9 kg
15.	Power consumption (Stirring)	8.5 W
16.	Power consumption (Heating)	550 W
17.	Nominal operating voltage	230 V; 50/60 Hz or 120 V; 50/60 Hz

64. Muffle furnace

Sl. No.	Main Components	Detailed Specifications	
1.	Max temperature	1100°C	1400°C
2.	Continuos operating temperature	1000°C	1300°C

3.	Heating element	Kanthal wire	Silicon carbide (SiC) rods
4.	Thermocouple	K Type	R Type
5.	Chamber MOC	Ceramic fiber board	Ceramic Zirconium board
6.	Exterior MOC	Mild steel powder coated	Mild steel powder coated
7.	Insulation	Ceramic fiber blanket	Ceramic fiber blanket
8.	Temperature controller	PID controller with SCR power control	PID controller with SCR pow
9.	Power supply	220 Volts 50Hz	3 Phase 440 Volts 50Hz (with energy saving tra
10.	Accessories	One pair of furnace gloves One crucible steel tong	

65. Oven- Moisture for Glass Drying:

Sl.No.	Main Components	Detailed Specifications
1.	Oven Capacity	570 lbs./hr. (for aluminum chips)
2.	Dimensions	115″ W x 160″ L x 113″ H
3.	Material thermal combustion	800°F
4.	Afterburner chambers' operating temperature	1,500°F
5.	Average cleaning and drying time cycle	Between 4 and 30 minutes
6.	Total natural gas	From 1,200,000 BTU/hr to 1,2000,000 BTU/hr
7.	Insulation rating	2,300°F
8.	Combustible volume input limit:	2% of maximum process material weight
9.	Insulation	Five-layer wall protection- 4″ of 2,300°F, to prevent outside enclosure temperature from exceeding 140°F.
10.	Accessory Dimensions	Vibratory Feeder Stand & Hopper Assembly: 60″ W x 75″ L x 114″ H

66. Sample Shaker:

Sl.No.	Main Components	Detailed Specifications
1.	Capacity	5-10 litres
2.	Platform size	7 x 11
3.	Shaking orbit	10 mm
4.	Countdown timer	0-99 minutes
5.	Min speed	50 – 300 RPM
6.	Power Supply	220-240 v, 50 Hz, Single phase

67. Rotatory Vacuum Evaporator:

Sl.No.	Main Components	Detailed Specifications
1.	Heating Bath	B-100. Temperature range of 20° to 95° C.
2.	Max. evaporating flask size	4000mL (3 kg)
3.	Type of Display of Set and actual Temperature	Digital
4.	Standard Joint	SJ 24/40
5.	Lift System	Manual lift
6.	Glass Assembly	C (Cold trap) for low boiling point solvents
7.	Protective Coating	Safety plastic + glass coating
8.	Recirculating Chiller	F-100, fix +10° C, 400 W
9.	Vacuum Controller	I-100, with Woulff bottle
10.	Vacuum Pump	V-100, 1.5 m3/h, 10 mbar

68. RT-PCR

Specifications:

1. The system should be automated for both real-time PCR and post-PCR (end point) analysis using in-built Peltier based PCR machine.
2. System should support applications including absolute quantitation, simultaneous analysis data forrelative quantitation of Unlimited plates of 96 wells each, (4-6 colour multiplexing), allelic discrimination (SNP), dissociation curve analysis as well as pathogen detection and plus/minus assay using internal positive control.
3. Instrument should have 96 well sample block of 0.1ml capacity, able to run fast and standard run on the same block.It can also have 6 separate Peltier-controlled blocks with a fixed gradient with a 25-degree range.
4. System should complete Fast 40 cycle protocol in less than 40 minutes and standard protocol inunder 2 hours.
5. The system should have LCD touch display with USB interface to export the data.
6. The temperature range of the thermo block should be 4°C to 99°C with accuracy of ±0.25°C
7. The system should have complete solution for Fast Real time PCR machine:Fast instruments, Fast reagents, Fast protocols and Fast assays.

a) Sample Ramp Rate: fast Mode: ±3.5°C/secStandard Mode: ±1.6°C/sec

b) Pear Block Ramp Rate: 5.5ºC/sec, Temperature Uniformity: ±0.50ºC, 30 seconds after clockstart.

8. The Excitation source should be single blue LED light source or Tungsten Halogen or high intensity Xenon lamp and emission detection by photodiodes or cooled CCD camera. There should be enough excitation and emission filters to cover majority of dyes.
9. System should be flexible to support 96 well plates individual tubes and 8 strip tubes. The system should be quoted with interchangeable blocks.
10. System software should provide simultaneous analysis data forrelative quantitation of unlimited plates of 96 wells each.

11. The system should have Normalization of reaction due to non-PCR related fluctuations such as pipettingvariations, should be possible by using ROX™ or any other calibrated dye.
12. System should support reaction volume 2-30 µL.
13. All assays should run using Universal Thermal Cycling conditions to eliminate for theOptimisation of PCR machine.
14. The instrument software must be capable of detecting and analysing a different gene, SNP or pathogen target in every well of the 96/384 well plate. The instrument software should not restrict the number of assays or targets that can be run on a single 96/384 well plate.
15. The system should have easy door design for loading and unloading 96 well plates or individual 0.2 ml PCR tubes.
16. System should collect data for all filters for all wells regardless of plate setup. The software should allow reanalysis of data so that data is never lost.
17. The instrument should be pre-calibrated for at least seven dyes including the following during installation at the customer site: FAM™/SYBR® Green I, VIC®/JOE™, NED™/TAMRA™/ and ROX™. The user should be able to use any of these dyes in an experiment without needing to recalibrate the instrument. Addition of new dyes should be possible without hardware change.
18. The system should be supplied with licensed full version software for primer and probe design with comprehensive assay design and development guidelines for quantitative and qualitative real- time assays, should be provided to enable designing of custom oligo assays.
19. System should be standardized for at least two homogeneous reaction chemistries including SYBR Green I and dualcolor TaqMan or four colour hybridization probes (FRET).
20. The system should be offered pre-validated and functionally tested Gene Expression Assays as well as SNP Genotyping Assays and the flexibility to design specific assays for new templates of interest.
21. The instrument software should utilize a multi-componenting algorithm designed to provide precise deconvolution of multiple dye signals to enable the simultaneous detection of multiple fluorophores.
22. The system should be supplied with latest configuration desktop system.
23. The system should have warranty of 3 years.
24. The system should be CE/ISO certified.
25. The system should work on 230V,50Hz
26. User/Technical/Maintenance manuals, Certificate of calibration and inspection from factory to be supplied with system.
27. Compliance to each of the above points should be separately indicated and evidence presencefor each of them (Product brochures should be highlighted wherever required)
28. The system should be supplied with all the accessories required to function.

69. Solvent Dispenser

Sl.No.	Main Components	Detailed Specifications
1.	Power Requirements	60-90 PSI (4.2-6.3 kgf/c M2) regulated clean, dry air supply
2.	Pneumatic Coupling Supplied	Quick disconnect male plug, 1/8" male NPT standard (ISO 1/8 28 7/1)
3.	Air Consumption	7.2 cc (.44 cu. in) /stroke : .0125 cu meters (.46 cu. ft) /hr @ maximum recommended speed
4.	Compatible Solvents	Cyclohexanone Dichloroethane Dichloromethane Dimethylformamide (DMF) Dimethyl sulphoxide, Ethylacetate Isopropyl Alcohol Methylethyl ketone(MEK) Tetrahydrofuran (THF) Trichloroethane
5.	Dispensing Surface Range diameter	
6.	External Surface	1.5 mm to 22.4 mm./060" to .880"
7.	Internal Surface	2.0 mm to 31.8 mm/.080" to 1.25"

8.	External/Internal Combination	3.1 mm/2.0 mm to 22.4 mm/19.0 mm./120"/.080" to .880"/.750"
9.	Operating Temperature Range	10o C to 46o C (50o F to 115o F)
10.	Dispensing Length Range	Up to 25.4 mm (1")
11.	Pump Displacement	.85 cc
12.	Maximum Recommended Speed	30 strokes per minute
13.	Minimum Recommende Speed	2 strokes per minute
14.	Solvent Volume Applied	Dependent on component size, length of dispensing and pump speed
15.	Weight (dry)	3.7 kg: 8.2 lbs.
16.	Maximum Solvent Capacity	(Usable Volume) 1.0 liters
17.	Construction	Anodized aluminum, stainless steel, PTFE, DELRIN®, UHMW polyethylene

70. TDS Meter

- Measures total dissolved solids (TDS, mg/L), electrical conductivity (EC,µS/cm), temperature (°C) and Fahrenheit (°F) of water
- –Pen type, portable and handheld
- –With backlight design is convenient for using in darkness
- –High precision.
- –Auto-hold function: avoid to misreading and mis-recording
- –Auto-off function: shuts off automatically after 60 seconds of non-use to conserve batteries
- –Auto temperature compensation from 5-50°C
- –Display: large and easy-to-read LCD screen
- –Factory calibrated: pls recalibrated with professional advices
- –Warranty: 3 years

Specifications

- –LCD display: 34mm x 17mm or better
- –Power source: CR2032 Battery, DC3V
- –Show TDS 0~4999 ppm
- –Show EC 0~9999µS
- –Show temperature 0~99°C & 32~212°F
- –Accuracy: ± 2% for TDS and EC, ±3°C for temperature.
- –Weight: Approximately 50g
- –Backlight: green, TDS≤40ppm, direct drinking water
- red, TDS > 40ppm, non-drinking water
- –Battery life: 1000 hours continuous testing

71. Vortex Mixers

Sl.No.	Main Components	Detailed Specifications
1.	Speed Range	230V: 0 - 2,850 rpm,120V: 0 - 3,400 rpm
2.	Operating Modes	Touch or continuous

3.	Ambient Operating Range	+4° to 65°C
4.	Dimensions	3000cc
5.	Weight	2-2.5Kg
6.	Electrical	230V~, 50 Hz or 120V~, 6

72. Waring Blender/grinding mill

Sl.No.	Main Components	Detailed Specifications
1.	Quality	• Ultra-heavy-duty, 3.75 HP commercial motor • Metal-on-metal, stainless steel coupling system for durability and reliability • Durable, full die-cast motor housing with rugged rubber feet to reduce vibration • Dishwasher-safe, one-piece jar pad for easy cleaning
2.	Speed selection	3 speed selections and MAX PULSE to chop and mix
3.	Keypad	Easy-to-clean and easy-to-use electronic membrane keypad
4.	Blade	Durable, high-performance stainless-steel blade
5.	Storage	The stackable, 1 gallon, BPA-free polyester container makes storage easy
6.	Lid	Easy-off, rubberized lid with removable clear cap for adding ingredients and for pressure reduction during hot food blending

73. Water Bath Shaker:

Sl.No.	Main Components	Detailed Specifications
1.	Voltage (V)	220 V
2.	Frequency (Hz)	50 Hz
3.	Display Type	Digital
4.	Automation Grade	Automatic
5.	Material	Stainless Steel

74. Gel doc system & Electrophoretic unit

- ✓ High resolution CCD camera: 6 mega pixel resolution with 1360x1024or higher pixel array.
- ✓ Data acquisitions: 16 bit and 4096 gray level. Pixel Size: 4.6x4.6 micron.
- ✓ Motorized control for Zoom with numerical feedback and software acquisition preset integrated into an intuitive and easy to use interface along with gel alignment templates, aperture & Iris with f/1.2, 12-75 mm lens with broad range amber filter.
- ✓ Gel alignment templates matched to agarose or protein gel trays and ready gels.
- ✓ Blue illumination integrated in a light tight darkroom with software controlled illumination to view DNA gels using blue excitable DNA fluorescent stains such as Gelscreen, SYBR safe dyes and SYBRGreen.
- ✓ UV and white light source: 302 nm illumination source having 25x26 Tran- illumination area withWhite Light Converter screen for viewing protein gels with trans blue illumination.
- ✓ Fire wire connectivity, with 3 position filter slider with amber filter.
- ✓ *Software for imaging and analyzing 1-D electrophoretic gels*, dot blots, slot blots, and colony counts. Software should be able to do:

- Quantitate and analyze a variety of data
- Rapid molecular weight determinations with choice of multiple regression models. Band/lanematching analysis with comparative dendrogram creation.
- Background subtraction correction of gradient gels
- VNTR and Phylogenetic tree formation.
- Colony counting that discriminates colonies and plaques
- Array tools to analyze and quantitate dot blots, slot blots, and medium-density arrays
- Annotation tools to add text and lines
- 3 D viewer for critical analysis of closely spaced bands
- Tools for compliance with US FDA 21 CFR Part 11 regulations Automation Manager for
- Recall of lane and sample layouts
- Molecular weight determination, Volume overlays, Text and line overlays

- ✓ Dynamic range should be more than 3 order of magnitude.
- ✓ A Branded Work Station- Laptop with dual core Processor, (hp/Dell/apple) 2GB RAM, 250 GB HDD, DVD R/W Drive, with 17" TFT , Windows XP Pro, compatible for running the 1-D software
- ✓ Online UPS (1 KVA) of reputed brand.

Electrophoresis Apparatus with Accessories

- Horizontal gel apparatus: 18 – 20 cm (Length) x 25 – 30 (Breadth) x 5- 7.5 cm (Height), 40-60 samples, multichannel pipette compatible combs and gel caster.
- Vertical gel apparatus: 10 – 12 cm (Length) x 8 – 10 (Breadth) x 8 - 12 cm (Height), 5-10 samples, glass plate (10 x10 cm), comb capacity of 35µl -50µl and gel caster.
- Gel imaging system with UV transilluminator (white light and UV light), built in with 5MP – 10MP camera; 1D Gel analysis Soft-ware.
- Power pack (output 10 – 300 V) with output terminals, timer, 3 digit LED display and start/stop function.

75. UV- Visible Spectrophotometer

Sl No	Description	Specifications
01	Optical System	Double beam
02	Light source	Halogen lamp, deuterium lamp OR Xenon flash Lamp
03	Detector	Photomultiplier tube/ Photodiode
04	Wavelength range	190 – 1100 nm
05	Wavelength accuracy	±0.1 nm or better
06	Wavelength repeatability	±0.05 nm or better
07	Wavelength Scan/Slew rate	100000 /min or better
08	Lamp interchange wavelength	Auto switching synchronized with wavelength, switch range should be selectable between 290 and 390 nm
09	Spectral Bandwidth	0.1 and 5.0 nm at 0.01 nm intervals
10	Resolution	0.1 nm or better
11	Stray light	≤0.005% (220 nm NaI)
12	Photometric accuracy	±0.002 Abs
13	Noise level	Better than or equal to 0.00003 Abs at 500nm
14	Software	Windows 10 professional 64 bit , should be free upgradeable to windows 10 later.
15	Sample Compartment	Suitable for liquid sample. Quote pair of 10 mm cuevette
16	Future upgradable options	Should have the provision for upgradable to solid sample samples and Constant temperature cell holder. **ADD: System should be compatible with upgrade to multicell holder of > 6 cells. It**

		should also have the compatibility to upgrade with Multi-cell peltier facility, 0 to 100 Deg C having capability with > 3 temp settings at a time for running multiple temp controlled experiments at the same time.
17	Warranty	Three years warranty from the date of installation
18	Desktop PC	Branded wifi enabled desktop PC with specification Branded i3 PC, 4 GB RAM, 1 TB HDD, CD drive, 21 inch monitor

76. µC Turbidity

Sl.No.	Main Components	Detailed Specifications
1.	Range	0 to 200.0 JTU/NTU 200 to 1000 JTU/NTU
2.	Accuracy	± 3% of full scale deflection in 0-1000 jtu/ntu
3.	Sample System	30 mm clear glass cuvettes
4.	Light Source	6.8 Volt, 0.3 Amps tungsten Lamp
5.	Detector	Photodiode
6.	Memory	In built memory to retain both range standard solution and last set value even after power loss.
7.	Calibration	With formazine solution
8.	Display	16×2 Lines Alphanumeric
9.	Power Supply	230 V ± 10% 50 Hz
10.	Accessories	Test tube set , Dust cover and Operational manual.

77. Inductively Coupled Plasma- Mass Spectrometer

Technical Specifications for ICP-MS	
ICP-MS system for elemental analysis which is the latest in the category and capable todeliver **sub-ppb level analysis of elements ions**. System should be bench top model.	
Purpose: Trace and ultra-trace elemental analysis (ppm, ppb and ppt) in a single aspiration and in a single method. Detailed specifications are as follows:	
S.No.	**Technical specifications**
1.	Sample introduction system should comprise of peristaltic pump, nebulizer (Quartz orbetter), and spray chamber.
2.	A peristaltic pump with >=10 rollers multi-channel (3 channel or more) which can supportvariable flow rates.
3.	It must include quartz nebulizer as standard having high resistance to acids.
4.	Peltier-cooled, temperature controlled quartz spray chamber.
5.	Quartz torch with 2.5 mm ID injector.
6.	Fully automated software controlled adjustment of the position of torch with independent movements in all three X, Y and Z directions.
7.	Three or more software controlled gas mass flow controllers or equivalent technology forcontrol of plasma gas lines (nebulizer, plasma and auxiliary gas flow). Additional MFC for organic solvent usage should also available.
8.	Argon gas dilutions system like AGD/UHMI/AMS without any manual intervention should be quoted.
9.	Sample introduction system must be able to handle samples containing high TDS of ranging in between 20 to 40% through software controlled AGD/UHMI/AMS. All necessary accessories required for running High matrix high TDS samples should be included as standard supply.
10.	The ICPMS must have software controlled RF generator operating between 25 to 40 MHZ.The RF power range of ICP-MS should be operating at range 500 to 1600W or better for automatic control of torch ignition, shutdown and system warm up.

11.	Automatic shutdown of the plasma by the system after completion of analysis.
12.	Suitable water cooled interface vacuum and with standard high performance Ni sampling and Ni skimming cones for high matrix samples with minimal matrix condensation to suitall applications.
13.	The ICP-MS system should have one or more cones/interface should be to achieve all desired performance specifications of the instrument. In combination with all parts of theinstrument guaranteed specification can be achieved.
14.	Lens /cones system should be outside the vacuum system to reduce down time.
15.	The ion focusing system capable of removing all neutrals & photons from the ion path without causing any wear and tear to any part of the optics. For maintenance, free optics ICPMS system should have horizontal/off axis or quadruple optics. The ion optics/ quadrupole optics must be covered in warranty for 10 years of operation with approx. 40, 0000 sample.
16.	). Sensitivity specifications are as follows: (UOM): MCPS/ppm 9Be or Li: 5 or better 115In or Y: 90 or better 238U or Tl: 70 or better . Detection limit : as follows 9Be or Li: 1 ppt or better 115In or Y: 0.5 ppt or better 238U or Tl: 0.5 ppt or better
	. Following points should also be met: Oxide ratio (%) CeO/Ce ≤2.5 or better
17.	Mode of operation: ICP-MS shall be capable of three modes of operation: Standard Mode, Collision Cell Mode and Reaction Cell to utilize a wide variety of gases like, H2/O2/CH4 (Min two gas)in pure and/or pre-mixed gas as per hardware requirement. The system should run Standard mode, KED mode and reaction mode simultaneously in single run. System should have dedicated and separated gas line for helium and minimum two dedicated gas line for reactive gas with mass flow controller as per hardware requirement to comply the application. Fully automated and software controlled change over between standard, collision and reaction modes.
18.	Control: Fully automated and software driven switching of reaction and collision gases or pre-mix gas. Unit will have the flexibility of applying both gases using single method for removal of interferences. The Cell should possess factory fitted mass flow control (MFC) or an equivalent technology for collision as well as reaction or mixed gas according to the system requirement. The cell should be able to perform Mass shift/proton shift reaction.
19.	The mass range should be from 5-280 amu or better.
20.	Quadrupole based Ion detector with RF 2 MHz or higher
21.	Mass scan speed should be ≥3000 amu/s or better
22.	The analyser must have the ability to discretely control the resolution of selected mass regions dynamically without affecting the overall nominal resolution of the system.
23.	True linear dynamic range ion detection should be 10 or more orders of magnitude.
24.	Vacuum system: Should have rotary pump or turbo molecular pump corrosion resistant for extremely high gas throughput.
25.	Auto sampler: Auto sample should hold 100 vials or more. It should control by same software provided by the manufacturer of ICP-MS. It should have free X, Y, Z movement, washing & random access to all sample vials.
26.	System controller and operating system & printer: The ICPMS and other attached supporting system shall be driven from a dedicated computer system (branded PC with i7 or better processor with appropriate RAM) having the latest hardware and operating system) with LCD/LED touchscreen of 32 inch or more along with wireless keyboard and mouse & Branded compatible printer for offline data analysis The software shall provide fully integrated operation of the machine and sample inlet system. There should be a facility of automatic data transfer from the ICP-MS PC to the desired location as per customer’s choice.
27.	Vendor should also offer an additional latest branded PC to support the system and sufficient storage (to keep the data for 10 yr) with LCD/LED touchscreen of 32 inch or more along with wireless keyboard and mouse & Branded compatible printer for offline data analysis with min 01 off-line licenses of the software to perform off-line activity.

28	Standards to supply: Individual/Multi Trace Metal standards (1000ppm, 100ml) with certificate of analysis for elements and 2 year expiry such as: Chromium, Cobalt, Copper, Manganese, Molybdenum, Selenium, Zinc, Calcium, Sodium, Potassium, Mercury, Cadmium, Iron, Nickel, Platinum, Selenium, Silver, Thallium, Arsenic, Antimony, Aluminium, Beryllium, Silicon, Iodine, Platinum.
29	Speciation studies: The system should be capable of performing speciation studies of following ions: As, Cr, Hg, Se. The columns (Two each) for speciation of As, Cr and Hg should be quoted. An integrated /inbuilt LC-ICP-MS interface to be provided which should include quaternary pump , degasser, flow cells, column heater, speciation column for As, Cr, Hg, Se(two each) with all required accessories. The full configuration of HPLC-ICP- MS and transfer valve must be under one single software control.
30.	The analysis of ions mentioned along with speciation is essential to be shown at the time of installation.
31	The system should be capable of nanoparticles concentration estimation. Dwell time of detector should be 100 microseconds or better
32	Dual magnetron, and 1800 watt Microwave digestion system should be provided for sample preparation. Temperature range: 230 degree or better Pressure: 25 bar or more No. of vessels:12 or more should be put in single run Each vessel size should be 50ml or more
	Additional Consumables & Spares
33.	Additional Consumables & Spares/ accessories to be quoted apart from 1 qty. each which comes by default. for - Ni Sample cone-5 Nos. - Ni Skimmer/hyperskimmer Cone-05 Nos. - Quartz Spray Chamber-05 Nos. - Quartz Torch-05 Nos. - Quartz injector-03 Nos. - Standard spray chamber- 03 set - Peristaltic Pump Tubing for samples – uptake-150 Nos. - Peristaltic Pump Tubing - Drain- 150 Nos.
	- Internal STD kit with Peristaltic Pump Tubing for ISTD- 150 Nos. - Auto sampler uptake Probe- 03 Nos. - Pump oil – for 10 years of operation - Preventive maintenance kit- 05 Nos. - Platinum sample cones- 3 set -Cone cleaning solution – 2 gallon(if required) -Swab cotton tipped both ends- 300 Nos. (if required) - Alumina powder- 100 gm- 5 set (if required) - ICPMS autosampler vials-2000 Nos - Organic solvent tubing complete set sample & drain(15 Nos each) - Quartz Nebulizer: 05 Nos. - Screw, spacer and O-ring for cell - 02 sets - Fluid filter for chiller - 02 sets - Fluid for chiller - 07 L - Rf coil/equivalent technology-3 No. - Sheild torch/plasma lock or equivalent technology - 5 No - PFA/Inert sample and rinse tubing - 02 sets - Oil Element for Outlet Mist Filter -05 set Replacement cartridge for oil mist filter for Rotary pump -05 set

	- Graphite gasket for Sampling cone- 25 Nos. - Sample tubing for nebulizer, 0.5mm id (30 set) - Tubing for spray chamber drain (20 Mtr) - Standard autosampler probe and complete tubing set - 10 sets HF/Inert kit with dedicated nebulizer, spray chamber, tubing set, inert torch and platinum cone set Note: Apart from above consumables vendor should offer any other consumables if required. Any consumable not required for particular instrument may be omitted.
34.	The institute shall provide partitioned cabin (Aluminium frame, glass and ACP partition) for instrument; other specifications for site preparation are to be fulfilled by the vendor only for successful installation. The vendors may visit the site for tentative expenditure.
35.	Only the principle company may participate in tender. All the agreements shall be done with principle company only.
36.	Items for installation requirement: All necessary pre-installation requisites/consumables including chemicals, acids, gases and standards for complete installation and demonstration of the instrument need to be supplied. Gas cylinders with regulators (minimum number of cylinders required are mentioned here): Argon - 08 Nos., Helium - 02 Nos., reaction gas cylinders: Methane/Oxygen/Hydrogen – 02 Nos. (min. two gas) as per system requirement to comply with all applications and regulations. Gas Panel as per requirement Manifold with four cylinder capacity for Argon. Gas line installation. Argon manifold for 4 cylinder with auto change over, valves, regulator and gas purification panel-01 no. Suitable exhaust fume hood assembly for both ICP-MS and microwave digestion system. Compact and low-noise chiller unit(s) as per manufacturer's recommendation.
	Inorganic Speciation standards and columns for As, Cr, Hg and Se. Auto-tuning standards. Single nanoparticles standards for Au and Ag (three concentrations each) ICP-MS Grade suprapure Acids: 5L Nitric acid, 5L Hydrochloric acid, 2 Ltr Hydrogen Peroxide, 4 Ltr Hydrofluoric acid. Suitable granite-top tables for ICP-MS & LC unit and desktop. Suitable online 20KVA UPS for a minimum backup for 1-2 hr(including MCBs, wires and all fittings etc.) 1.5 ton A.C with installation-2Nos Vibration free table with granite top to keep the system and one separate computer table to keep the PC and printer
37.	Warranty for ICP-MS: Three years of comprehensive warranty from the date of installation without any additional cost to the purchaser. The warranty should cover ICP- MS, speciation unit, microwave digestion system, UPS, fume hood, and other items including all accessories and spare parts. Warranty of ICPMS should be from manufacturer with OEM part number. All accessories/spare parts shall be warranty from OEM with part number within a period of 3 years after commission, any accessory/spare part is proved to be defective then such product shall be replaced by the manufacturer/supplier. Such replacement shall be sole obligation of the manufacturer/supplier, including payment of charges for freight delivery, custom duty and transportation, if any. In case of breakdown during the warranty period, a competent Service Engineer of the supplier should make as many visits as are required to rectify the problem and replace the faulty parts, without any liability of cost. Service response time must be less than 3-5 working days for small issues and less than 10-15 working days for major breakdown/hardware changeover; otherwise, the warranty period shall automatically be extended by the time taken to rectify the defects. Also, one maintenance & annual calibration visits every year (within the warranty period) by authorized service engineers are required.

38.	1) Non-technical requirements: The supplier must have sold, installed and provided support for 03 LC-ICP-MS systems across India. A list with corresponding details must be provided. Specifications claimed must be supported by published OEM literature/document from the company. The supplier of the instrument must confirm in writing that spares for the entire instrument (including additional units and accessories) will be available for at least a period 10 years after the model of equipment supplied has been phased out. For frequently required spares, there should be adequate inventory available with the Indian agency of the company. Supplier must have proven capability and trained manpower to troubleshoot equipment both in terms of hardware and software. Bidders must furnish documentary evidence (client's certificate) in support of satisfactory operation of the instrument. Suitable and essential tool kit is to be supplied with the instrument for required maintenance. Accessories that are needed for the operation of the instrument, but not mentioned in the Technical Specifications list, must be quoted by the vendor.
	The instrument should be installed and commissioned at site. Site requirements must be provided by the supplier. Complete technical details of pre-installation requirements should be furnished along with the technical bid. The Institute will only provide the installation room and required electrical outlets. Vendor must supply all other infrastructure accessories, facilities and services required for successful installation and operation of the instrument. Vendor may conduct site survey prior to installation at no additional cost.
39.	Training: The supplier must provide one-week comprehensive training on operation, application and maintenance of the instrument after installation

78. GasChromatography-Mass Spectrometer/MS

Sr. No.	Main component	Detailed specifications
1.	Gas Chromatography-Mass Spectrometer	GC with original licensed windows-based software and Split-Spitless capillary inlet along with one 15 vials liquid auto sampler. GC must be capable to accommodate at least two detectors & two injectors in working conditions simultaneously. Minimum retention time repeatability <0.06 % and Peak area repeatability <2 %mustbe there with the system.
2.	Column Oven	Capable of housing at least two columns; operating temperature range: Upto 400 ° or more. Temperature Programming Ramps: 20 or more. Temperature setpoint resolution 0.1-degree C or more.
3.	Pneumatics	System must have pneumatic Electronic Flow Control for all inlets& detectors. Retention time locking facility should be quoted along with the GC system.
4.	Split Split-less Capillary Inlet	Split/split less capillary port Temperature: 400 °C or more Fully EPC Split ratio: 6000: 1 or more Pressure setting range 0–100 psi
5.	Auto Injection facility	Injection range up to 100 ul. RSD of better than 0.3% RSD area reproducibility Vial capacity should be 15 or more.
6.	Software	Original window-based software with license

7.	FID	Maximum operating temperature 425 °C or better MDL <3 pg carbon/s as tridecane or better Linear dynamic range >10^7 or better Maximum data acquisition rate 450 Hz or better Full range digital data path enables peaks to be quantified over the entire 10^7concentration range in a single run.
8.	TCD	Maximum operating temperature 400 °C MDL <800 pg tridecane/mL or better Linear dynamic range 107
9.	Consumables	Vials and Caps- 5000 EI Filament-1 Liner- 10 each for split and split-less Ferrules- 10 Column nut- 10 Septa- 100 Glass wool- 10 Autosampler syringe- 4
10.	Computer	Compatible Computer & LaserJet Printer
11.	Gas Cylinder	Zero Air, H2 and N2 Gas Cylinder, regulators with Gas purification panel.

79. Liquid Chromatography-Mass Spectrometer/MS

Sl.No.	Main Components	Detailed Specifications
1.	Ionization source	One no of standalone ESI source should be quoted. The flow rate for sourceshould be 0.001 to 2ml/min. For semi-polar analytes, an additional APCI source should be offered. These standalone 2 different sources should be interchangeable easily.
2.	Interface of system	Simple interface for maintaining cleanliness of ion optics and capable of handling large batches of complex samples. The ionization spray should be orthogonal (90 deg)to interface.
3.	Vacuum System	A fully protected air cooled vacuum system using turbo molecular pumps androtary pumps. Vacuum read backs and automated vent system.
4.	System Calibration	Should have auto tuning and automatic calibration of system.
5.	Mass Range	2 to 2000 m/z
6.	Mass Stability	0.1 amu across 12 hours.
7.	Scan Speed	10,000 amu/sec or better.
8.	Resolution	Unit Resolution
9.	ESI sensitivity in SIM mode	70:1 RMS for 1pg on column quantity of Reserpine in ESI +ve.
10.	Linear Dynamic Range	6 order of dynamic range for quantitative applications.

80. Microwave Sample Digester

Technical Specifications for Microwave Digestion System

Supply, installation, demonstration and testing of compact tabletop Microwave Digestion System for closed vessel acid digestion system for environmental matrices for trace elements with all required accessories, spares, cables and operating software

Microwave Digestion system with 10 nos. vessel rotor for quick dissolution of various sample like waste water, sludge, soil, sediment, rocks, vegetation, dry powder of marine organisms, coal, ores, ceramics, minerals, alloy, etc. without loss of heavy metals from sample solution. The system should have metal body (not plastics/polymer for fire safety) and should have solid steel door for safety.

Magnetron: The microwave system should have dual Magnetron system with good diffuser for homogenous microwave power distribution in the cavity. Microwave frequency should be 2450 MHz and installed power should be 1900 W minimum or higher (twomagnetrons minimum 950 W each).

Cavity: The cavity should be made of stainless steel housing with PTFE plasma coating for corrosion resistance. Also all hardware should have protective coating for the resistance from mineral acid. The microwave cavity should be designed for volume of about 43 ltrs. There should be provision of door lock so that it cannot be opened if the temperature inside the vessel is not safe. Also all hardware should have 5 layer protective coating for the resistance from acid.

Safety:

i. 18/8 stainless steel housing with multi-layer PTFE coating with a large flange with 36mm ID. Additional multiple ports on the side walls of the microwave cavity.
ii. Protected against acids and solvents with polymer coating on both inner and outersurfaces
iii. Self-resealing pressure responsive door mounted on sprigs, to ensure maximum safetyeven in case of overpressure release.
iv. Door completely made of 18/8 stainless steel
v. An automatic door locking system ensures to keep the door closed until the set temperature is reached. User can modify the set temperature according to the lab needs.
vi. Four independent door safety interlocks to prevent microwave emission in case of improper door closure or misalignment
vii. Built-in exhaust system located above the microwave cavity and separated from theelectronics to prevent corrosion.
viii. Dual magnetron system with rotating diffuser for homogeneous microwavedistribution in the cavity.
ix. Exclusive magnetron protection from reflected microwave power
x. Continuous and PID-controlled microwave emission at all power levels

Exhaust: The system should have inbuilt exhaust system to cool the vessels and to drive away if any fumes in the cavity.

Vessels: Minimum 10 position high-pressure rotor should be offered with 10 vessels. Vessels on the rotor should be segmented for easy use. Facility to use one or all the vessels together. Every vessel must have a vent-and-reseal spring to safely release the pressure in case of overpressure. Burst-disk, membrane or self-releasing / continuous venting device is not suitable due to very low performance.
No of vessels can be used in run- *1 to 10 (even single vessel digestion should be possible.)*
Maximum Temperature capacity of vessel - Up to 300°C Maximum Pressure capacity of vessel- Up to 100 bar (1500psi)Volume of Vessel- 100ml
Vessel Material- PTFE-TFM
Safety Shield- PEEK reinforced with glass fiber

Sensors: IR Temperature sensor should be offered for each vessel temp control and monitoring.. Also, same temp should be displayed on the software. The software should automatically reduce the microwave power in case of over temperature avoiding sample loss.

Controller: It should be Touch-screen 4,3" TFT display 480x272 VGA resolution with 16M colors. Icon-driven software allowing the user to edit, save and run a virtually unlimited number of methods. Multiple levels access by password, such as User, Administrator and Service. The software must control all parameter online and display: temperature, time and power directly on the terminal.

Power: Power requirement : 230V, 50 Hz

Warranty : Vendor should offer one year warranty for the instrument. Also should offer minimum 3 years warranty against corrosion of cavity coating and 2 years warranty against Magnetron.

Accessories : Required accessories, cables, software, manuals, spares for 2 years will besupplied with the instrument.

81. ULTRA-HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY (UHPLC) &TANDEM MASS SPECTROMETER (MS/MS)

1. Requirements

Functional and performance requirements

The System shall:

Enable screening, identification (simultaneous qualitative and quantitative analysis) of trace levels of residues or contaminants in food, feed and environmental samples with a high degree of sensitivity, by a routine monitoring laboratory;

Be easy to use and rugged enough to handle consistently high through- put laboratory test activities;

Enable a high degree of selectivity when simultaneously analysing multiple residues/contaminants such as but not limited to veterinary drugs, mycotoxins and pesticides in a diverse range of matrices;

Include at the minimum, upgradable easy-to-use software: allowing remote controlled operation; enables data integration, audit trails, customizable data reporting and online assistance (wizards); compatible with latest Windows, enables multitasking.

Technical Requirements

A. **MS/MS:** The System shall-

- Have an electron multiplier, photomultiplier or appropriate alternativeas, detection type;
- Be of a minimum, five orders of magnitude in dynamic range;
- Include at least two ionization sources that may include a multimodel ESI/APCI with attributes such as but not limited to ability to switch between ionization modes as well as polarization (positive/negative ion) switching in 15 ms-20 ms;
- Demonstrate mass stability of 0.1 daltons (amus), over a minimum of 24 hours;
- Measure mass ranges of ≤50 m/z to a maximum of 2,000 m/z in both analyzers (for a hybrid), but not less than 1,500 m/z for the triple quadrupole;
- Have a mass resolution of ≤0.7 amu, full width at half maximum;
- Scan ions at maximum speed of 15,000 amus/s-20,000 amus/s;
- Have a range of scan modes;
- Demonstrate high sensitivity: minimum of 250,000:1 signal-to-noise ratio (S/N) following injection of 1 pg or below, of a suitable analyte (e.g. reserpine) analysed in positive ESI or relevant food contaminantat ultra-trace level in appropriate matrix;
- With regard to the hybrid option, have two analyser types, a quadrupole and a 2D ion trap with a minimum S/N ratio of 90,000:1 upon analysis of a food/feed contaminant such as (but not restricted to) chloramphenicol at 1 pg or below in multiple/selected reaction monitoring negative mode, following on column or alternative injection that does not bypass the UHPLC;
- ability to exclude or correct for cross-talk when monitoring related transitions in 1 ms-5 ms dwell time;
- Demonstrate fast MRM scanning with short inter-MRM time (≤ 3 ms);

B. UHPLC

Include a UHPLC with or meeting the following:

- A binary high-pressure unit tolerating pressures of up to 18,000 psi at1 ml/min flow rates;
- Flow range: between 0.001 ml/min to 3 ml/min or above;
- Flow accuracy: ± 1% or ≤± 10 µl/min;
- Flow precision: ≤ ± 0.07% relative standard deviation (RSD);
- Gradient delay volume: 600 µl - 900 µl (includes mixer);
- A vacuum solvent degasser;
- A temperature-controlled auto-sampler (able to hold test samples at10ºC or below);

- Automated sample injector (with an optional additional manualinjector);
- Auto-sampler tray (s) holding a minimum of 70 vials (1.5 ml-2 mlcapacity);
- Injection range up to 20 µl or more; Precision typically < 0.25 % RSDof peak areas from < 5 µl to 100 µl; Typically, < 1 % RSD of peak areas from 1 µl to 5 µl; Minimum sample volume of 1 µl; Carryover typically < 0.1 %;
- A column compartment/oven with temperature range of 20ºC to 65ºC,with temperature accuracy ± (0.1ºC – 0.8ºC);
- Have the possibility to interface with other detectors besides theMS/MS;
- Tolerates solvent pH range of 2 to 12;
- Includes error alert/diagnostic system, with solvent and gas leakage detection;

C. GAS GENERATOR AND COMPRESSOR

Include an autonomous nitrogen gas generator and compressor, enablingcurtain gas flow of 12 L/min at 60 pounds per square inch (psi); Source gas (zero air) of minimum 26 L/min at 100 psi; and Exhaust gas (air) of minimum 8 L/min at 60 psi, all as applicable to System offered;

D. OTHERS (POWER, KITS, APPLICATION MATERIAL)

Meet electrical power specifications for the End-User and include a compatible UPS that can hold power for a minimum of 1 hour; ≥6,000VA;

Include kits for installation, demonstration and optimization or operation/maintenance as applicable; may include additional softwareto facilitate analytical method development/validation and database searching;

E. COMPUTER

A PC with the latest operating system compatible with the System with appropriate interface; Minimum Intel core (i7) processor, 2.66 gigahertz, 4gigabyte Random Access Memory (Minimum RAM, 500 Gigabyte, RAID 1, DVD RW; Intel HD Graphics; ≥1 TB hard disk); a keyboard; a mouse; one Minimum 19-inch colour LCD flat screen monitor.

1. Support Requirements

The Contractor shall provide a clear support plan appropriate for the End-User with full contact details for customer and technical support (after-sales services). Note that in-country or regional support is preferred. The plan must identify timely access to relevant spare parts (and associated consumables), availability and promptness of telephone and/or electronic communication, andproximity of service. The Contractor shall note any routine or preventivemaintenance that is recommended for the End-User, as well instrument components where replacement is expected in a specified instrument lifespan. After-sale services provided (where applicable at the request of the End-User)and the associated costs shall be an agreement between the Contractor and End-User, not responsibility of the IAEA.

The Contractor shall offer, as an option, five (5) years of maintenance services following the initial warranty period.

2. Marking

The System shall have all safety markings and any additional relevant markings inthe English language.

3. Packing

The System, for shipment to the End-User, shall be packed in accordance withapplicable international standards for this type of equipment.

The System shall be properly packaged to avoid damage even several monthsafter delivery (prior to installation).

4. Quality Requirements

The System shall be manufactured, shipped and installed in accordance with the Contractor's ISO quality assurance system or an equivalent quality assurance system. Documents demonstrating that the System meets such quality and that it is newly manufactured (and not refurbished per se) shall be presented.

The Contractor shall document the compliance with this quality assurance system.

5. Testing and Acceptance

The System, prior to shipment, shall be tested for conformance based on manufacturer's performance specifications and the minimum requirements specified herein.

The System, after installation, shall be tested by the Contractor together with the End-User to demonstrate that the performance meets the manufacturer's performance specifications and the minimum requirements specified herein asdetermined by the IAEA and the End-User.

System test results shall be documented by the Contractor in an acceptance protocol that shall be signed by the End-User.

6. Installation and Training

The Contractor shall install the System at the End-User's premises, and provideon-site training in the English language on system operation and application, as well as guidance on basic maintenance/troubleshooting, for five working days no later than four weeks after installation. The Contractor shall ensure thatthe End-User familiarizes with the instrument software.

A report of satisfactory installation and training endorsed by the End-User shall be sent to the IAEA (i.e. Programme Management Officer as well as Procurement and Technical Officers of the project under which the System is procured).

7. Deliverable Data Items

The Contractor shall provide two complete sets of operation and servicing manuals and schematics in the English language. Additional and relevant applicationliterature shall be provided to aid the End-User in routine operation of the System.

SPECIFICATIONS OF EQUIPMENTS FOR MICROBIAL LABORATORY

1. Anaerobic Jars

Sl.No.	Main Components	Detailed Specifications
1.	Material Of Construction	Polycarbonate
2.	Gauge	Compound Gauge on lid. A compound gauge manometer eliminates guesswork in monitoring cycle process
3.	Control Valves	Two needle valves on lid
4.	Racks and Holders	SS Rack for 100 mm plates,with gas pack sachet holder. Cold Catalyst fitted to underside of lid.
5.	Usage	Anaerobic Jars are ideal for all tests requiring strict anaerobic conditions in closed
6.	Catalyst	Cold Catalyst fitted to underside of lid

2. Analytical Balance (Macro)

Sl.No.	Main Components	Detailed Specifications
1.	Display	LCD
2.	Capacity (KG)	220g
3.	Pan Size (MM)	85mm
4.	Readability	0.1mg
5.	Automation Grade	Automatic

3. Vertical Autoclave

Sl.No.	Main Components	Detailed Specifications
1.	Chamber Volume	15-20 Litre
2.	Shape	Vertical
3.	Insulation Wall	Double Wall
4.	Power Consumption	4 KW
5.	Automation Grade	Semi Automatic

4. Automated Culture Media Preparator with pourer stacker

Sl.No.	Main Components	Detailed Specifications
1.	Capacity	4-16 litres
2.	Material	Stainless Steel
3.	Insulation Wall	Double Wall
4.	Automation Grade	Semi Automatic
5.	Pressure Range (psi)	20

6.	Frequency Rate	50 Hz
7.	Voltage	220-250 V

5. Automated glassware washer

Sl.No.	Main Components	Detailed Specifications
1.	High Flow Circulation Pump	600LPM for powerful wash action
2.	Washing Chamber	AISI/SS 316L Stainless Steel Non-Corrosive
3.	Front Door	Automatic Double glass window with high visibility
4.	Sprayer arms	2 nos., top and bottom
5.	Water inlets	Tap water Hot Water Purified (DI)
6.	Washing Temperature	Up To 93°C - Efficient Thermal Disinfection
7.	Wash Programs	35 Default & 100 User Customizable
8.	Active Drying Facility	up to 115°C with Built-in HEPA filter
9.	Pumps	Two peristaltic pumps for acid and liquid detergents
10.	Washing Chamber Dimensions	H x W x D (mm) 640x533x542

6. Binocular Microscope

Sl.No.	Main Components	Detailed Specifications
1.	Magnification	10X, 40X, 100X (oil immersed)
2.	Angle of Inclination	45 deg C
3.	Halogen Bulb	6V, 20W
4.	Inter pupillary Adjustment Distance	40 - 70 mm

7. Bio Safety Cabinet Class II Type B2 (Total Exhaust)

Sl.No.	Main Components	Detailed Specifications
1.	Air balancing	0% circulation, 100% exhaust
2.	Protection	Product & Personnel & Environmental protection
3.	Exhaust Duct Requirement	Hard Duct Only
4.	Control Plenum surrounded by	Negative plenum
5.	Cleanliness level	ISO class 5 as per ISO 14644-1
6.	Average Airflow	In flow Velocity - Minimum 0.45m/s (90 FPM) at 8'' front opening Down Velocity - 0.30 m/s (65 FPM)
7.	Noise level	60 db on A scale60 db on A scale60 db on A scale

8.	Light Intensity	Minimum 900 lux inside the working area at ambient zero
9.	MOC	Main Body - Galvanized Iron with PU coated / Stainless Steel – Satin Finish Working Area - Stainless Steel IS 304 Grade Satin Finish
10.	Supply filter Efficiency	HEPA filter having EU 13 rating with suitable size 99.99% down to 0.3 microns.
11.	Prefilter Efficiency	Aeromech make, EU 4 rating with suitable size 90% down to 10 microns
12.	Vibration Level	Minimum
13.	3 Pins Switch & Socket	15 AMPS - 1 set in each unit.
14.	Microprocessor Control	Airflow display and UV Interlocking and Low airflow Alarm and Supply & Exhaust filter Fail

8. BOD Incubator (Fungi, Bacteria, Mycorrhiza) BOD incubator:

Sl.No.	Main Components	Detailed Specifications
1.	Capacity	340L
2.	External Chamber	MS / SS 304 / SS 316
3.	Internal Chamber	Stainless Steel 304 (Optional SS 316)
4.	Temperature Range	2°C to 60°C
5.	Temperature Uniformity	+/- 0.5°C at 20°C
6.	Display	Backlit LED Display
7.	Temperature control	Microprocessor P.I.D controller, On / Off compressor control, PT 100 sensor
8.	Door	Solid insulated door (with glass & without glass) w/ lock
9.	Shelves	Stainless steel Shelves (2 to 5), removable
10.	Refrigerant	R134a / CFC Free
11.	Power	220 Volts

9. Carbon dioxide incubator

Sl.No.	Main Components	Detailed Specifications
1.	Capacity	1.4 cu.ft.,40L
2.	Data Outputs	RS485
3.	Humidity Delivery	Water Pan
4.	Chamber Material	Polished Stainless CO2 Concentration Range steel
5.	Electrical Requirements	120V 60Hz
6.	CO2 Concentration Range	0 to 20%
7.	CO2 Sensor Technology	TC Sensor
8.	Relative Humidity	Greater Than 90% at 37 Deg C
9.	Temperature Range	Ambient +5 Deg to 50 Deg C
10.	Dimensions	14x12x14 in (35.5x30.5x35.5cm) Interior,23.5x18.5x18 in. (59.7x47x46.5cm) Exterior (LxWxH)

10. Colony Counter

Sl.No.	Main Components	Detailed Specifications
1.	Design	Streamline
2.	Function	Hold function to stop counting at any time
3.	Memory & Data storage	Multiple memory locations with data storage even after power off
4.	Digital Counter	4-digit resettable counter with audio beep at every count
5.	Pen Probe	Auto mark pen probe
6.	Glass Plate	Wolffhuegal grid glass plate with adjustable focus, 110 mm Magnifying glass

11. Digital pH Meter

Sl.No.	Main Components	Detailed Specifications
1.	Type (Mount)	Table-Top
2.	Type (Display)	Digital
3.	pH Range	0-14
4.	Display	16 x 2 alpha numeric LCD display
5.	Range	0 to 14 pH 0 to + 1999.9 mV, Temp. 0 to 100°C
6.	Resolution	.01 pH 0.1 mV Temp. 0.1 Deg. C
7.	Accuracy	+ 0.01 pH + 1 digit mV, Temp + 0.10
8.	Calibration	Auto / Manual
9.	Power	230V + 50Hz

12. Frost Free Double door (side by side) Refrigerator

Sl.No.	Main Components	Detailed Specifications
1.	Capacity	675L
2.	Defrosting Technology	Frost Free
3.	Refrigerator Type	Side by side
4.	Body material	Stainless steel
5.	Dimension(Width X Depth X Height)(mm)	71.6 cms ,178 cms , 91.2 cms
6.	Power Consumption	220
7.	Super Cool Function	Yes
8.	Stabilizer Free Operation	Yes

13. Fumigator (360 ^{o} movable)

Sl.No.	Main Components	Detailed Specifications

1.	Particle Size	1-30microns (convertible for Dry fog wet fog)
2.	Power Input	220-240 volts, AC, with liquid flow rate 1.5-9 Ltr/ hr,
3.	Timer	Adjustable.
4.	Air velocity	130 M/sec.,
5.	Throw Area	30-40 ft. and 20-25 feet height
6.	Area coverage	More than 12000 cubic feet.
7.	Motor Speed	approx. 22000 rpm (Approx.).
8.	Tank gasket	silicon grade.

14. Hot Air Oven

Sl.No.	Main Components	Detailed Specifications
1.	Temperature Range	5°C above ambient to 250°C maximum with digital temperature controller
2.	Door	Solid doors w/ silicone rubber gasket & lock
3.	Shelves	2 – 3 Stainless steel shelves (Removable)
4.	Air Circulation	Forced air circulation
5.	Power Supply	220 Volts
6.	Fan	Noiseless

15. Howard Mold Counter

Sl.No.	Main Components	Detailed Specifications
1.	Rectangle dimensions	15mm x 20mm
2.	Chamber dimensions	75mm x 32mm
3.	Depth	0.1mm
4.	Parallel line spacing	1.382mm
	WD	Requires at least 0.5mm of working distance

16. Laminar Air flow

Sl.No.	Main Components	Detailed Specifications
1.	Operational Requirements	The basic equipment shall consist of a HEPA filter, pre filter, suitable blower assembly, necessary lighting, indicators and controls for the cabinet.
2.	Dimensions	96”(w) x30”(D) x37”(H)
3.	Controller	Airborne particulate controller and UV microprocessor controller
4.	Filter	HEPA filter with polypropylene construction
5.	Lighting	Built-in fluorescent lighting with all-white surfaces
6.	Design	Custom sturdy cart or stand, Cup sink and vacuum fittings, Polypropylene base cabinet and Ultraviolet light source with full sash
7.	Should be suitable for Media plate pouring, non-hazardous cell culture, sterile compounding and DNA/RNA extraction	

17. Micro Filtration Assembly

Sl.No.	Main Components	Detailed Specifications
1.	Material	Borosilicate Glass
2.	Shape	Conical
3.	Design Type	Conical
4.	Capacity	250 ML. TO 2000 ML.
5.	Type Of Glassware	Heavy-Wall Glass
6.	Size/Dimension	Standard
7.	Annealing Point	565ºC

18. Micropipettes

Sl. No.	Main Components	Detailed Specifications			
1.	Volume Range	1-10 µl	10-100 µl	100-1000 µl	1-10 ml
2.	Accuracy	±2.5 - 1.0%	±1.8 - 0.8%	±1.5 - 0.6%	±2.5 - 0.6%
3.	Repeatability	≤1.5 - 0.4%	≤0.5 - 0.15%	≤0.3 - 0.15%	≤0.3 - 0.15%
4.	Micropipette stand with 9 individual slots				

19. Orbital shaker

Sl.No.	Main Components	Detailed Specifications
1.	Power	Voltage 230V / 50 Hz / single phase
2.	Shaking motion type	Orbital motion
3.	Speed range (RPM)	30 to 350 RPM
4.	Shaking amplitude (mm, diameter)	≥ 25
5.	Shaking platform size (W× D)	~420mm × 420mm that can accomodate 9 flask of 1 Litre volume.
6.	Speed control	Speed controller with digital RPM meter with ± 2 RPM control
7.	Timer	Automatic timer with continuous/timed operation
8.	Motor	Solid state, brushless DC motor
9.	Door	Large viewing window with internal light
10.	Temperature Range	~ 10 oC to 70 oC, ± 0.3 oC
11.	Temperature variation alarm	Visual/audible alarms
12.	Cabinet/ Main Body	Stainless steel or powder-coated steel
13.	Compact design	external dimensions not more than 550X750X815 (mm)

20. Refrigerated Centrifuge

Sl.No.	Main Components	Detailed Specifications

1.	Maximum speed (rpm)	26,000 to 29,000
2.	Maximum RCF (x g)	70,000 to 100,000
3.	Maximum capacity (tubes x ml)	6 x 1000 in swing bucket or fixed angle
4.	Drive motor	High-torque brushless high-frequency motor, Imbalance tolerant drive
5.	Temperature range	–10 to +40
6.	Controls	Microprocessor based, Touch-screen interface (can be used with gloved hand). Memory-based programmed operation 30 programmed operations possible.
7.	Acceleration/ deceleration profile	Nine stage variable acceleration. Nine stage braked deceleration, plus free deceleration
8.	Refrigeration system	CFC/ HCFC free with 5-year non-prorated warranty
9.	Run Time	99hrs; Hold
10.	Programmability	30 programs or more, Actual run timer
11.	Temp. Control Accuracy	± 2°C of set temperature
12.	Speed control accuracy	± 20 rpm
13.	Speed control range	100 to 26,000 rpm or 500 to 29,000rpm
14.	Ambient temperature for operation	2°C to 40 °C
15.	Power	200-240 VAC, 50 Hz, 30 A, single phase
16.	Required Rotors	7. Fixed angle rotor 8x50ml RPM 25,000 and above and RCF 75,000 x g or above with Polyallomer 50ml tubes and adapter for 10 ml along with tubes (minimum 50 tubes of each volume should be quoted in main offer) 8. Swing Bucket rotor 4x500ml RPM 5,300 or above and RCF 6,800 x g or above with adapters for 50ml conical tubes, 15ml conical tubes and MTP's carrier.
17.	Optional Rotor	Fixed angle rotor 6x1000ml RPM 8,000 and above and RCF 15,900xg and above should be quoted along with PC bottles.
18.	The centrifuge must provide automatic and instant rotor identification, completed upon installation of the rotor into the centrifuge, before the run is started and a fast, simple, and secure mechanism to automatically lock the rotor onto the drive adapter, eliminating the need for a tool or to hand tighten. The centrifuge must have a vacuum system, with a HEPA filter option, which only operates when needed and can be user selected for high performance or for energy saving. The centrifuge must be able to run without the use of a partial vacuum to protect sensitive samples in micro-plates, as well as other tubes and bottles.	

21. Upright Frost Free Vertical Deep Freezer (-25 °C)

Sl.No.	Main Components	Detailed Specifications
1.	Rated power(w)	840
2.	Temperature(C)	-25° C
3.	Volume(L)	838
4.	Interior material	304 stainless steel
5.	Compressor/Brand	2/SECOP
6.	Cooling Type	Direct cooling
7.	Power Supply	220/50 ~ 60; 115/60

	(V/Hz)	
8.	Alarm	High/Low Temperature, Sensor error, Power failure, Door ajar

22. UV Viewing Chamber

Sl.No.	Main Components	Detailed Specifications
1.	UV Exposed area	300 x 300 nm
2.	UV Tubes	Short wave 254nm; Long Wave 365nm; White Light
3.	UV Window	UV Protective shield
4.	UV Area	Rubber mat with strips
5.	Input Voltage	230v +/-10% AC 50Hz

23. Ultrapure Water Purification System

Sl.No.	Main Components	Detailed Specifications
6.	Performance	Should take at least 100 Micro Siemens of Water conductivity and should deliver ultra pure product water by point of use dispenser with rocker arm, volumetric dispensing and auto shut off facility having i) Resistivity > 16 Megaohm-cm ii) Conductivity < 0.06 Micro-Siemens iii) TOC level < 10 ppb iv) Flow rate > 1 lit / min
7.	Catridges	• Separate feed water specific purification cartridge and application specific polishing cartridge • Dual wavelength (185 & 254nm) hot cathode, UV lamp with ballast and quartz sleeve placed in an electro polished housing.
8.	Membrane	Final filter 0.22 micron PVDF validated membrane. System should have option for producing Pyrogen/Rnase-free water with UF cartridge.
9.	Resistivity Meter	Built in coaxial resistivity meter with a cell constant of 0.01/cm and 0.1degree C accuracy thermistor
10.	Display	• Maintenance display for sanitization, exchange purification cartridges, activation of fast flush, depressurization, air purge • Control display showing product water resistivity / conductivity both compensated and non compensated mode, product water temperature, product water resistivity greater or below set point

4. Drawings

Not available

5. Inspections and Tests

The following inspections and tests shall be performed:

a. Inspection and tests prior to shipment of Goods and at final acceptance are as follows:

i. The inspection of the goods shall be carried out to check whether the goods are in conformity with the technical specifications attached to the purchase- order form and shall be in line with the inspection/test procedures laid down in the technical specifications and the General Conditions of contract. Following broad test procedure will generally be followed for inspection and testing of machine. The supplier will dispatch the goods to the ultimate consignee after internal inspection testing along with the supplier's

inspection report, manufacturer's warranty certificate. The purchaser will test the equipment after completion of the installation and commissioning at the site of the installation. For site preparation, the supplier should furnish all details to the purchaser sufficiently in advance so as to get the works completed before receipt of the equipment. Complete hardware and software as specified in section VI should be supplied, installed and commissioned properly by the supplier prior to commencement of performance tests.

ii. The acceptance test will be conducted by the purchaser/their consultant or any other person nominated by the purchaser, at its option. The acceptance will involve trouble- free operation for seven consecutive days. There shall not be any additional charges for carrying out acceptance tests. No malfunction, partial or complete failure of any part of hardware or excessive heating of motors attached to printers, drivers etc. or bugs in the software should occur. All the software should be complete and no missing modules/sections will be allowed. The supplier shall maintain necessary log in respect of the results of the tests to establish to the entire satisfaction of the purchaser, the successful completion of the test specified. An average uptake efficiency of 98% (to modify as considered appropriate for each case) for the duration of test period shall be considered as satisfactory.

iii. In the event of the hardware and software failing to pass the acceptance test, the purchaser reserves the rights to get the equipment replaced by the supplier at no extra cost to the purchaser.

b. Manuals:

i. Before the goods are taken over by the Purchaser, the Supplier shall supply operation and maintenance manuals of the goods and equipment. These shall be in such detail as will enable the Purchaser to install the hardware and software as stated in the specifications.

ii. The manuals shall be in the ruling language (English) and in such form and numbers as stated in the contract.

iii. Unless and otherwise agreed, the goods and equipment shall not be considered to be completed for the purpose of taking over until such manuals and drawings have been supplied to the Purchaser.

c. For the System and Other Software the following will apply:

i. The Supplier shall provide complete and legal documentation of hardware, all subsystems, operating systems, compiler, system software and the other software. The Supplier shall also provide licensed software for all software products, whether developed by it or acquired from others. The supplier shall also indemnify the purchaser against any levies/penalties on account of any default in this regard.

d. Acceptance Certificates:

i. On successful completion of acceptability test, receipt of deliverables etc, and after the purchaser is satisfied with the working on the system, the acceptance certificate signed by the supplier and the representative of the purchaser will be issued. The date on which such certificate is signed shall be deemed to be the date of successful commissioning of the systems.

PROFORMA OF CERTIFICATE FOR ISSUE BY THE PURCHASER AFTERSUCCESSFUL INSTALLATION AND STARTUP OF THE SUPPLIED GOODS

No. Date:

M/s.

Sub: Certificate of startup of the supplied Goods

1. This is to certify that the goods as detailed below has/have been received in good condition along with all the standard and special accessories (subject to remarks in Para No. 2) and a set of spares in accordance with the Contract/Specifications. The same has been installed and commissioned.

(a) Contract No. _____dated_____

(b) Description of the Good_____

(c) Quantity _____

(d) Name of the consignee _____

(e) Date of start upand proving test_____

2. Details of accessories/spares not yet supplied and recoveries to be made on that account.

S. No.	Description	Amount to be recovered

3. The proving test has been done to our entire satisfaction.

4. The supplier has fulfilled his contractual obligations satisfactorily. *

or

The supplier has failed to fulfill his contractual obligations with regard to the following:

(a)

(b)

(c)

(d)

5. The amount of recovery on account of non-supply of accessories and spares is given under Para No. 2.

6. The amount of recovery on account of failure of the supplier to meet his contractual obligations is as indicated in endorsement of the letter.

Signature _____

Name _____

Designation with Stamp _____

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* Explanatory notes for filling up the certificates:

(a) He has adhered to the time schedule specified in the contract in dispatching the documents/drawings pursuant to Technical Specifications.

(b) He has supervised the startup of the plan in time i.e., within the period specified in the contract from the date of intimation by the Purchaser in respect of the installation of the plant.

(c) Training of personnel has been done by the supplier as specified in the contract

(d) In the event of documents/drawings having not been supplied or installation and startup of the plant have been delayed on account of the supplier, the extent of delay should always be mentioned.

CHECKLIST FOR BIDDERS FOR SUBMITTING REQUIRED DOCUMENTS

Sl. No.	Documents to be submitted along with the Bid	Yes / No	Page #
1	Letter of Bid –Technical & Financial duly signed and stamped as per format		
2	Power of Attorney		
3	Bid Security as per the format		
4	Bidder Information Form as per the format		
5	Manufacturer's Authorization Form for Non-Manufacturers as per the format		
6	Audited Financial Statements of last three years (2017 – 2020) demonstrating the average annual turnover of INR 4 crore		
7	Price Schedule for supply as per schedule of requirements as per the bid document		
8	Price and Completion Schedule - Related Servicesas per the bid document		
9	Delivery Schedule requirements along with related services schedule as per Bid Document		
10	Technical schedules of goods as required by technical specifications as per the bid document		
11	A detailed description of the Goods essential technical and performance characteristics		
12	A clause-by-clause 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.		
13	Country of Origin of Goods. The documentary evidence of the goods and services eligibility shall consist of a statement in the Price Schedule on the country of origin of the goods and services offered which shall be confirmed by a certificate of origin at		

Sl. No.	Documents to be submitted along with the Bid	Yes / No	Page #
	the time of shipment.		
14	Any instance of previous past performance that may have resulted into adverse actions taken against the bidder during the last five years. Such adverse actions taken against the bidder may be treated as unsatisfactory performance history while deciding the award of contract. If no instance of previous past performance has resulted into adverse actions this should be clearly indicated in the Bidder's bid.		
15	Attested copy of Company's PAN, GST and Income Tax details and ward/circle where it is being assessed.		
16	List of after sales service centre/s and details of the technical personnel working with the Bidder.		
17	Original brochures with relevant page(s) in support of the technical specifications of the equipment along with the web addresses/URL of the manufacturers.		
18	Clear photocopies of certificates/licenses where bidders are exempted from any taxes or licenses.		
19	Performa for Performance Statement as per format		
20	Copies of contracts/work or purchase orders of the last three years to substantiate the technical capability.		
21	Any other relevant document (please mention in your bid)		

PART 3 – Contract

Section VIII - General Conditions of Contract

Table of Clauses

Section VIII. General Conditions of Contract

1. Definitions

1.1 The following words and expressions shall have the meanings hereby assigned to them:

(a) "Contract" means the Contract Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.

(b) "Contract Documents" means the documents listed in the Contract Agreement, including any amendments thereto.

(c) "Contract Price" means the price payable to the Supplier as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions therefrom, as may be made pursuant to the Contract.

(d) "Day" means calendar day.

(e) "Completion" means the fulfillment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.

(f) "GCC" means the General Conditions of Contract.

(g) "Goods" means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract.

(h) "Purchaser's Country" is the country specified **in the Special Conditions of Contract** (SCC).

(i) "Purchaser" means the entity purchasing the Goods and Related Services, as **specified in theSCC.**

(j) "Related Services" means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance and other such obligations of the Supplier under the Contract.

(k) "SCC" means the Special Conditions of Contract.

(l) "Subcontractor" means any person, private or government entity, or a combination of the above, to whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.

(m) "Supplier" means the person, private or government entity, or a combination of the above, whose Bid to perform the Contract has been accepted by the Purchaser and is named as such in the Contract Agreement.

(n) "The Project Site," where applicable, means the place **named in theSCC.**

2. Contract Documents

2.1 Subject to the order of precedence set forth in the Contract Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory. The Contract Agreement shall be read as a whole.

3. Not Used

3.1 Not Used

4. Interpretation

4.1 If the context so requires it, singular means plural and vice versa.

4.2 Incoterms

(a) Unless inconsistent with any provision of the Contract**,** the meaning of any trade term and the rights and obligations of parties thereunder shall be as prescribed by Incoterms **specified in theSCC**.

(b) The terms EXW, CIP, FCA, CFR and other similar terms, when used, shall be governed by the rules prescribed in the current edition of Incoterms **specified in theSCC** and published by the International Chamber of Commerce in Paris, France.

4.3 Entire Agreement

The Contract constitutes the entire agreement between the Purchaser and the Supplier and supersedes all communications, negotiations and agreements (whether written or oral) of the parties with respect thereto made prior to the date of Contract.

4.4 Amendment

No amendment or other variation of the Contract shall be valid unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party thereto.

4.5 Nonwaiver

(a) Subject to GCC Sub-Clause 4.5(b) below, no relaxation,

forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.

(b) Any waiver of a party's rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

4.6 Severability

If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

5. Language

5.1 The Contract as well as all correspondence and documents relating to the Contract exchanged by the Supplier and the Purchaser, shall be written in the language specified in the **SCC.** Supporting documents and printed literature that are part of the Contract may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified**,** in which case, for purposes of interpretation of the Contract, this translation shall govern.

5.2 The Supplier shall bear all costs of translation to the governing language and all risks of the accuracy of such translation, for documents provided by the Supplier.

6. Joint Venture, Consortium or Association

6.1 If the Supplier is a joint venture, consortium, or association, all of the parties shall be jointly and severally liable to the Purchaser for the fulfillment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the joint venture, consortium, or association. The composition or the constitution of the joint venture, consortium, or association shall not be altered without the prior consent of the Purchaser.

7. Eligibility

7.1 The Supplier and its Subcontractors shall have the nationality of an eligible country. A Supplier or Subcontractor shall be deemed to have the nationality of a country if it is a citizen or constituted, incorporated, or registered, and operates in conformity with the provisions of the laws of that country.

8. Notices

8.1 Any notice given by one party to the other pursuant to the Contract shall be in writing to the address **specified in theSCC.** The term "in writing" means communicated in written form

with proof of receipt.

8.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.

9. Governing Law

9.1 The Contract shall be governed by and interpreted in accordance with the laws of the Purchaser's Country, unless otherwise **specified in theSCC.**

9.2 Throughout the execution of the Contract, theSupplier shall comply with the import of goods and services prohibitions in the Purchaser's Country when:

(a) as a matter of law or official regulations, the Borrower's country prohibits commercial relations with that country; or

10. Settlement of Disputes

10.1 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.

10.2 If, after twenty-eight (28) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract. Arbitration proceedings shall be conducted in accordance with the rules of procedure **specified in the SCC.**

10.3 Notwithstanding any reference to arbitration herein,

(a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and

(b) the Purchaser shall pay the Supplier any monies due the Supplier.

11. Not Used

11.1 Not Used

12. Scope of Supply

12.1 The Goods and Related Services to be supplied shall be as specified in the Schedule of Requirements.

13. Delivery and Documents

13.1 Subject to GCC Sub-Clause 33.1, the Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Schedule

of Requirements. The details of shipping and other documents to be furnished by the Supplier are **specified in theSCC.**

14. Supplier's Responsibilities

14.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with GCC Clause 12, and the Delivery and Completion Schedule, as per GCC Clause 13.

15. Contract Price

15.1 Prices charged by the Supplier for the Goods supplied and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its Bid, with the exception of any price adjustments **authorized in theSCC.**

16. Terms of Payment

16.1 The Contract Price, including any Advance Payments, if applicable, shall be paid as **specified in theSCC.**

16.2 The Supplier's request for payment shall be made to the Purchaser in writing, accompanied by invoices describing, as appropriate, the Goods delivered and Related Services performed, and by the documents submitted pursuant to GCC Clause 13 and upon fulfillment of all other obligations stipulated in the Contract.

16.3 Payments shall be made promptly by the Purchaser, but in no case later than sixty (60) days after submission of an invoice or request for payment by the Supplier, and after the Purchaser has accepted it.

16.4 The currencies in which payments shall be made to the Supplier under this Contract shall be those in which the Bid price is expressed.

16.5 In the event that the Purchaser fails to pay the Supplier any payment by its due date or within the period **set forth in theSCC,** the Purchaser shall pay to the Supplier interest on the amount of such delayed payment at the rate **shown in theSCC,** for the period of delay until payment has been made in full, whether before or after judgment or arbitrage award.

17. Taxes and Duties

17.1 For goods manufactured outside the Purchaser's Country, the Supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the Purchaser's Country.

17.2 For goods Manufactured within the Purchaser's Country, the Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser.

17.3 If any tax exemptions, reductions, allowances or privileges may be available to the Supplier in the Purchaser's Country, the Purchaser shall use its best efforts to enable the Supplier to benefit from any such tax savings to the maximum allowable extent.

18. Performance Security

18.1 If required as specified in the SCC, the Supplier shall, within twenty-eight (28) days of the notification of contract award, provide a performance security for the performance of the Contract in the amount **specified in theSCC.**

18.2 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.

18.3 As specified in the SCC, the Performance Security, if required, shall be denominated in the currency (ies) of the Contract, or in a freely convertible currency acceptable to the Purchaser; and shall be in one of the format stipulated by the **Purchaser in theSCC,** or in another format acceptable to the Purchaser.

18.4 The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than twenty-eight (28) days following the date of Completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless **specified otherwise in theSCC.**

19. Copyright

19.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party

20. Confidential Information

20.1 The Purchaser and the Supplier shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract. Notwithstanding the above, the Supplier may furnish to its Subcontractor such documents, data, and other information it receives from the Purchaser to the extent required for the Subcontractor to perform its work under the Contract, in which event the Supplier shall obtain from such Subcontractor an undertaking

of confidentiality similar to that imposed on the Supplier under GCC Clause 20.

20.2 The Purchaser shall not use such documents, data, and other information received from the Supplier for any purposes unrelated to the contract. Similarly, the Supplier shall not use such documents, data, and other information received from the Purchaser for any purpose other than the performance of the Contract.

20.3 The obligation of a party under GCC Sub-Clauses 20.1 and 20.2 above, however, shall not apply to information that:

(a) now or hereafter enters the public domain through no fault of that party;

(b) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party; or

(c) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.

20.4 The above provisions of GCC Clause 20 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Supply or any part thereof.

20.5 The provisions of GCC Clause 20 shall survive completion or termination, for whatever reason, of the Contract.

21. Subcontracting

21.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under the Contract if not already specified in the Bid. Such notification, in the original Bid or later shall not relieve the Supplier from any of its obligations, duties, responsibilities, or liability under the Contract.

21.2 Subcontracts shall comply with the provisions of GCC Clauses 3 and 7.

22. Specifications and Standards

22.1 Technical Specifications and Drawings

(a) The Goods and Related Services supplied under this Contract shall conform to the technical specifications and standards mentioned in Section VI, Schedule of Requirements and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the Goods' country of origin.

(b) The Supplier shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any

modification thereof provided or designed by or on behalf of the Purchaser, by giving a notice of such disclaimer to the Purchaser.

(c) Wherever references are made in the Contract to codes and standards in accordance with which it shall be executed, the edition or the revised version of such codes and standards shall be those specified in the Schedule of Requirements. During Contract execution, any changes in any such codes and standards shall be applied only after approval by the Purchaser and shall be treated in accordance with GCC Clause 33.

23. Packing and Documents

23.1 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. During transit, the packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, salt and precipitation, 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.

23.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, **specified in theSCC,** and in any other instructions ordered by the Purchaser.

24. Insurance

24.1 Unless otherwise **specified in theSCC,** the Goods supplied under the Contract shall be fully insured—in a freely convertible currency from an eligible country—against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery, in accordance with the applicable Incoterms or in the manner specified in the **SCC.**

25. Transportationand Incidental Services

25.1 Unless otherwise **specified in theSCC,** responsibility for arranging transportation of the Goods shall be in accordance with the specified Incoterms.

25.2 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 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 a detailed operations and maintenance manual for each appropriate unit of the 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.

25.3 Prices charged by the Supplier for incidental services, if not included in the Contract Price for 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

26. Inspections and Tests

26.1 The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are **specified in theSCC.**

26.2 The inspections and tests may be conducted on the premises of the Supplier or its Subcontractor, at point of delivery, and/or at the Goods' final destination, or in another place in the Purchaser's Country as **specified in theSCC.** Subject to GCC Sub-Clause 26.3, if conducted on the premises of the Supplier or its Subcontractor, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.

26.3 The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in GCC Sub-Clause 26.2, provided that the Purchaser bear all of its own costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.

26.4 Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.

26.5 The Purchaser may require the Supplier to carry out any test and/or inspection not required by the Contract but deemed necessary to verify that the characteristics and performance of the Goods comply with the technical specifications codes and

standards under the Contract, provided that the Supplier's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impedes the progress of manufacturing and/or the Supplier's performance of its other obligations under the Contract, due allowance will be made in respect of the Delivery Dates and Completion Dates and the other obligations so affected.

26.6 The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.

26.7 The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Supplier shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall repeat the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to GCC Sub-Clause 26.4.

26.8 The Supplier agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the issue of any report pursuant to GCC Sub-Clause 26.6, shall release the Supplier from any warranties or other obligations under the Contract.

27. Liquidated Damages

27.1 Except as provided under GCC Clause 32, if the Supplier fails to deliver any or all of the Goods by the Date(s) of delivery or perform the Related Services within the period specified in the Contract, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage **specified in theSCC** 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 thoseSCC.** Once the maximum is reached, the Purchaser may terminate the Contract pursuant to GCC Clause 35.

28. Warranty

28.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

28.2 Subject to GCC Sub-Clause 22.1(b), the Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design,

materials, and workmanship, under normal use in the conditions prevailing in the country of final destination.

28.3 Unless otherwise **specified in theSCC,** the warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination **indicated in theSCC,** or for eighteen (18) months after the date of shipment from the port or place of loading in the country of origin, whichever period concludes earlier.

28.4 The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.

28.5 Upon receipt of such notice, the Supplier shall, within the period **specified in theSCC,** expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.

28.6 If having been notified, the Supplier fails to remedy the defect within the period **specified in theSCC,** the Purchaser may proceed to take within a reasonable period 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.

29. Patent Indemnity

29.1 The Supplier shall, subject to the Purchaser's compliance with GCC Sub-Clause 29.2, indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:

(a) the installation of the Goods by the Supplier or the use of the Goods in the country where the Site is located; and

(b) the sale in any country of the products produced by the Goods.

Such indemnity shall not cover any use of the Goods or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, neither any infringement resulting from the use of the Goods or any part thereof, or any

products produced thereby in association or combination with any other equipment, plant, or materials not supplied by the Supplier, pursuant to the Contract.

29.2 If any proceedings are brought or any claim is made against the Purchaser arising out of the matters referred to in GCC Sub-Clause 29.1, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

29.3 If the Supplier fails to notify the Purchaser within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Purchaser shall be free to conduct the same on its own behalf.

29.4 The Purchaser shall, at the Supplier's request, afford all available assistance to the Supplier in conducting such proceedings or claim, and shall be reimbursed by the Supplier for all reasonable expenses incurred in so doing.

29.5 The Purchaser shall indemnify and hold harmless the Supplier and its employees, officers, and Subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Supplier may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Purchaser.

30. Limitation of Liability

30.1 Except in cases of criminal negligence or willful misconduct,

(a) the Supplier shall not be liable to the Purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser and

(b) the aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to

any obligation of the supplier to indemnify the Purchaser with respect to patent infringement

31. Change in Laws and Regulations

31.1 Unless otherwise specified in the Contract, if after the date of 28 days prior to date of Bid submission, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in the place of the Purchaser's Country where the Site is located (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the Delivery Date and/or the Contract Price, then such Delivery Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with GCC Clause 15.

32. Force Majeure

32.1 The Supplier shall not be liable for forfeiture of its Performance Security, liquidated damages, or termination for default if and to the extent that it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

32.2 For purposes of this Clause, "Force Majeure" means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

32.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition 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.

33. Change Orders and Contract Amendments

33.1 The Purchaser may at any time order the Supplier through notice in accordance GCC Clause 8, to 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 shipment or packing;

(c) the place of delivery; and

(d) the Related Services to be provided by the Supplier.

33.2 If any such change causes 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 in the Delivery/Completion Schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this Clause must be asserted within twenty-eight (28) days from the date of the Supplier's receipt of the Purchaser's change order.

33.3 Prices to be charged by the Supplier for any Related Services that might be needed but which were not included in the Contract 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.

33.4 **Value Engineering:**Not Used

34. Extensions of Time

34.1 If at any time during performance of the Contract, the Supplier or its subcontractors should encounter conditions impeding timely delivery of the Goods or completion of Related Services pursuant to GCC Clause 13, the Supplier shall promptly notify the Purchaser in writing of the delay, its likely duration, and its cause. 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, in which case the extension shall be ratified by the parties by amendment of the Contract.

34.2 Except in case of Force Majeure, as provided under GCC Clause 32, a delay by the Supplier in the performance of its Delivery and Completion obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 26, unless an extension of time is agreed upon, pursuant to GCC Sub-Clause 34.1.

35. Termination

35.1 Termination for Default

(a) The Purchaser, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the

Supplier, may terminate the Contract in whole or in part:

(i) if the Supplier fails to deliver any or all of the Goods within the period specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 34;

(ii) if the Supplier fails to perform any other obligation under the Contract; or

(iii) if the Supplier, in the judgment of the Purchaser has engaged in Fraud and Corruption, as defined in paragrpah 2.2 a of the Appendix to the GCC, 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 35.1(a), the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Related Services similar to those undelivered or not performed, and the Supplier shall be liable to the Purchaser for any additional costs for such similar Goods or Related Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.

35.2 Termination for Insolvency.

(a) The Purchaser may at any time terminate the Contract by giving notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In such 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

35.3 Termination for Convenience.

(a) The Purchaser, by 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 the Supplier 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 twenty-eight (28) days 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 Related Services and for materials and parts previously procured by the Supplier.

36. Assignment

36.1 Neither the Purchaser nor the Supplier shall assign, in whole or in part, their obligations under this Contract, except with prior written consent of the other party.

37. Export Restriction

37.1 Notwithstanding any obligation under the Contract to complete all export formalities, any export restrictions attributable to the Purchaser, to the country of the Purchaser, or to the use of the products/goods, systems or services to be supplied, which arise from trade regulations from a country supplying those products/goods, systems or services, and which substantially impede the Supplier from meeting its obligations under the Contract, shall release the Supplier from the obligation to provide deliveries or services, always provided, however, that the Supplier can demonstrate to the satisfaction of the Purchaser that it has completed all formalities in a timely manner, including applying for permits, authorizations and licenses necessary for the export of the products/goods, systems or services under the terms of the Contract. Termination of the Contract on this basis shall be for the Purchaser's convenience pursuant to Sub-Clause 35.3.

Section IX - Special Conditions of Contract

The following Special Conditions of Contract (SCC) shall supplement and / or amend the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

GCC 1.1(i)	The Purchaser's Country is:*India*
GCC 1.1(j)	The Purchaser is: *Meghalaya Basin Management Agency (MBMA)*
GCC 1.1 (o)	The Project Site(s)/Final Destination(s) is/are:as per Annexure – 1 in Section VII – Schedule of Requirements
GCC 4.2 (a)	The meaning of the trade terms shall be as prescribed by Incoterms.
GCC 4.2 (b)	The version edition of Incoterms shall be *2010*
GCC 5.1	The language shall be:*English*
GCC 8.1	For **notices**, the Purchaser's address shall be: Attention: *Executive Director* **Meghalaya Basin Management Agency,** C/o Meghalaya State Housing Financing & Cooperative Society, Upper Nongrim Hills Shillong, India – 793003 Telephone: 03642522043 E-mail: mbdaprocurement@gmail.com Website: www.mbda.gov.in
GCC 9.1	The governing law shall be the law of*:India*
GCC 10.2	**Settlement of Disputes** The dispute settlement mechanism to be applied shall be as follows: (a) In case of Dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes 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 appointed 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

	arbitrators 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 Indian Council of Arbitration. (b) In the case of a dispute with a Foreign Supplier, the dispute shall be settled in accordance with provisions of UNCITRAL (United nations Commission on International Trade Law) Arbitration Rules. The Arbitral Tribunal shall consist of three Arbitrators one each to be appointed 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 arbitrators 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 Indian Council of Arbitration. (c) If one of the parties fails to appoint its arbitrator in pursuance of sub-clause (a) and (b) above, within 30 days after receipt of the notice of the appointment of its arbitrator by the other party, then the *Indian Council of Arbitration, both in cases of the Foreign supplier as well as Indian supplier, shall appoint the arbitrator. A certified copy of the order of the Indian Council of Arbitration, making such an appointment shall be furnished to each of the parties. (d) Arbitration proceedings shall be held at Shillong, Meghalaya, India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English. (e) The decision of the majority of arbitrators shall be final and binding upon both parties. The cost and expenses of Arbitration proceedings will be paid as determined by the arbitral tribunal. However, the expenses incurred by each party in connection with the preparation, presentation etc. of its proceedings as also the fees and expenses paid to the arbitrator appointed by such party or on its behalf shall be borne by each party itself. (f) Where the value of the contract is Rs. 10 million and below, the disputes or differences arising shall be referred to the Sole Arbitrator. The Sole Arbitrator should be appointed by agreement between the parties; failing such agreement, by the appointing authority namely the Indian Council of Arbitration. (a) (g) Except otherwise agreed to by the Parties, Arbitrators should give a decision in writing within 120 days of receipt of notification

	of dispute
GCC 13.1	Details of Shipping and other Documents to be furnished by the Supplier are given below: Upon delivery of the goods to the transporter/consignee, the supplier shall notify the purchaser and mail the following documents to the Purchaser: (A) Documents to be submitted to Purchaser:- (i) One original and three copies of commercial invoice, indicating MBMA, the Contract number, credit number; Goods description, quantity, unit price, and total amount. Invoices must be signed in original and stamped or sealed with the company stamp/seal; (ii) Proof of dispatch (POD) viz., Delivery note, Railway receipt, or Road consignment note or equivalent transport document or acknowledgement of receipt of goods from the Consignee; (iii) One original and three copies of Acknowledgement of receipt of goods from the Consignee i.e. Consignment Receipt Certificate (CRC)Four copies of packing list identifying contents of each package; One original and three copies manufacturer‘s Warranty certificate covering all items supplied. Four copies Internal Test Report of the Manufacturer for the items offered Four copies of the Certificate of Inspection furnished to Supplier by the nominated inspection One original and three copies of the Supplier‘s Certificate of Country of Origin covering all items supplied (iv) Copy of notification of the local tax authority in support of rate of tax indicated in invoice. (v) Any other additional procurement-specific document(s) required for delivery/payment purposes. The above documents shall be received by the Purchaser before arrival of the Goods (except where it is handed over to the Consignee with all documents) and if not received, the supplier will be responsible for any consequent expenses. Note: In the event that the documents presented by the Supplier are not in accordance with the Contract, then payment will be made against issue of the Acceptance Certificate to be issued by the Purchaser‘s Consignee.

GCC 15.1	The prices charged for the Goods supplied and the related Services performed shall notbe adjustable.
GCC 16.1	GCC 16.1—The method and conditions of payment to be made to the Supplier under this Contract shall be as follows: shall be made in Indian Rupees in the following manner: (i) **Advance Payment:**Ten (10) percent of the Contract Price shall be paid within thirty (30) days of signing of the Contract against a simple receipt and a bank guarantee for the equivalent amount valid until the goods are delivered, and in the form provided in thebidding documentor another form acceptable to the Purchaser. (ii) **On Delivery:**Eighty (80) percent of the Contract Price shall be paid on receipt of the Goods and upon submission of the documents specified in GCC/ SCC Clause 13. (iii) **On Final Acceptance:**The remaining ten (10) percent of the Contract Price shall be paid to the Supplier within thirty (30) days after the date of the acceptance certificate for the respective delivery issued by the Purchaser's representative in the proforma given in Section VII – item 6. Reimbursement of GST etc. will be at actuals based on documentary evidence of payment within 30 days of submission of bill with documents. *e BG will be released after the delivery of the Equipments.*
GCC 18.1	Performance Security to the Purchaser shall be for an amount of 5% of the total contract value, valid upto 60 days after the date of completion of performance obligations of three years including warranty obligations of three years.(total period of performance security shall be 28 months) In the event of any correction of defects or replacement of defective material during the warranty period, the warranty for the corrected/ replaced material shall be extended to a further period of 12 months and the Performance Bank guarantee for proportionate value shall be extended 60 days over and above the extended warranty period.

GCC 18.3	Amended the paragraph as under: The performance security shall be in the form of a bank guarantee/ Demand Draft/ Term Deposit/ Fixed Term Deposit, the named beneficiary shall be ***Meghalaya Basin Development Authority***. The bank guarantee shall be issued either by a bank located in the country of the Purchaser (Nationalized or Scheduled Bank in India) or a foreign bank through a correspondent bank located in the country of the Purchaser (Nationalized or Scheduled Bank in India) to make it enforceable and acceptable to the purchaser. ntee shall be in the format provided in the Bidding Documents
GCC 18.4	Substitute Clause 18.4 of the GCC by the following: Discharge of the performance Security shall take place not later than 60 days following the date of completion of the Supplier's performance obligations, including the warranty obligation, under the contract.
GCC 23.2	Packing Instructions: The Supplier will be required to make separate packages for each Consignee. Each package will be marked on three sides with proper paint/indelible ink with the following: (i) Project; (ii) Contract No.; (iii) Country of Origin of Goods; (iv) Supplier's Name; (v) Packing List Reference Number (vi) Government of Meghalaya supply – Not for sale. (include the Lot number) Suppliers should use recycled materials as much as possible for packing
GCC 24.1	The insurance shall be paid in an amount equal to 110 percent of the EXW value of the Goods from "Warehouse to warehouse (final destination)" on "All Risks" basis including War Risks and Strikes.
GCC 25.1	The Supplier is required under the Contract to transport the Goods duly insured to the specifiedfinal destination, and all related costs shall be included in the Contract Price.
GCC 25.2	Incidental services to be provided are: 1. Performance or supervision of the on-site assembly and/or start-up of the supplied Goods(Installation and Commissioning leading to acceptance by the purchaser)

	2. Operation and maintenance manuals together with drawings of the goods and equipment. 3. Operations and maintenance for five years including three years of warranty period. 4. Training of 5 technical staff at the location.
GCC 26.1	The inspections and tests shall be:*as per '5' (Inspection & Tests) of Section VII – Schedule of Requirements*
GCC 26.2	The Inspections and tests shall be conducted at: *BRDC*
GCC 27.1	The liquidated damages shall be: 0.5% of contract price per week or part thereof.
GCC 27.1	The maximum amount of liquidated damages shall be: *10%*
GCC 28.3	The period of validity of the Warranty shall be 3 year: For purposes of the Warranty, the place(s) shall be: Meghalaya Basin Development Authority, C/o Meghalaya State Housing Financing & Cooperative Society, Upper Nongrim Hills Shillong, India – 793003 Telephone: 03642522043 E-mail: mbdaprocurement@gmail.com Website: www.mbda.gov.in
GCC 28.5 & 28.6	The period for repair or replacement shall be: 15 days

Section X - Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.

Table of Forms

Letter of Acceptance

[letterhead paper of the Purchaser]

[date]

To: *[name and address of the Supplier]*

Subject: ***Notification of Award Contract No.*** . . . . . .

This is to notify you that your Bid dated . . . . ***[insert date] . .*** . . for execution of the . . . . . ***. . [insertname of the contract and identification number, as given in the SCC]***. . . . . for the Accepted Contract Amount of . . . . . ***. [insertamount in numbers and words and name of currency]***, as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by our Agency.

You are requested to furnish the Performance Security within 28 days in accordance with the Conditions of Contract, using for that purpose the of the Performance Security Form included in Section X, Contract Forms, of the bidding document.

Authorized Signature: _____

Name and Title of Signatory: _____

Name of Agency: _____

Attachment: Contract Agreement

Contract Agreement

[The successful Bidder shall fill in this form in accordance with the instructions indicated]

THIS AGREEMENT made the *[insert:**number**]* day of *[insert: **month**], [insert: **year**]*.

BETWEEN

(1) *[insert complete name of Purchaser]*, a *[insert description of type of legal entity, for example, an agency of the Ministry of .... of the Government of { insert name of Country of Purchaser }, or corporation incorporated under the laws of { insert name of Country of Purchaser }]* and having its principal place of business at *[insert address of Purchaser]* (hereinafter called "the Purchaser"), of the one part, and

(2) *[insert name of Supplier]*, a corporation incorporated under the laws of *[insert: country of Supplier]* and having its principal place of business at *[insert: address of Supplier]* (hereinafter called "the Supplier"), of the other part :

WHEREAS the Purchaser invited Bids for certain Goods and ancillary services, viz., *[insert brief description of Goods and Services]* and has accepted a Bid by the Supplier for the supply of those Goods and Services

The Purchaser and the Supplier agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other contract documents.

(a) the Letter of Acceptance

(b) Letter of Bid - Technical Part

(c) Letter of Bid - Financial Part

(d) the Addenda Nos._____ (if any)

(e) Special Conditions of Contract

(f) General Conditions of Contract

(g) the Specification (including Schedule of Requirements and Technical Specifications)

(h) the completed Schedules (including Price Schedules)

(i) any other document listed in GCC as forming part of the Contract

3. In consideration of the payments to be made by the Purchaser to the Supplier as specified in this Agreement, 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.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of *[insert the name of the Contract governing law country]* on the day, month and year indicated above.

For and on behalf of the Purchaser:

Signed: *[insert signature]*

in the capacity of *[insert title or other appropriate designation]*

in the presence of *[insert identification of official witness]*

For and on behalf of the Supplier:

Signed: *[insert signature of authorized representative(s) of the Supplier]*

in the capacity of *[insert title or other appropriate designation]*

in the presence of *[insert identification of official witness]*

Performance Security

(Bank Guarantee)

[The bank, as requested by the successful Bidder, shall fill in this form in accordance with the instructions indicated]

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: *[insert name and Address of Purchaser]*

Date:*[Insert date of issue]*

PERFORMANCE GUARANTEE No.:*[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _ *[insert name of Supplier, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the Applicant") has entered into Contract No. *[insert reference number of the contract]* dated *[insert date]* with the Beneficiary, for the supply of _ *[insert name of contract and brief description of Goods and related Services]*(hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[insert amount in figures]* ()*[insert amount in words]*,[1] such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the …. Day of ……, 2…[2], and any demand for payment under it must be received by us at this office indicated above on or before that date.

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[1] *The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, and denominated either in the currency (ies) of the Contract or a freely convertible currency acceptable to the Beneficiary.*

[2] *Insert the date twenty-eight days after the expected completion dateas described in GC Clause 18.4. The Purchaser should note that in the event of an extension of this date for completion of the Contract, thePurchaser would need to request an extension of this guarantee from the Guarantor.Such request must*

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

_____

[signature(s)]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Purchaser might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."