



**CENTRAL UNIVERSITY OF SOUTH BIHAR**  
(Notice Inviting Quotation)

**Tender Ref.:CUSB/S&P/CHEM/Tender/35/2016-17, Dated: 01/02/2017**

CUSB, sealed item rate tenders are invited from manufactures (or their 'authorized' dealers) for the items mentioned in **Annexure – II (A)** for its **GAYA CAMPUS**.

Sr. No.	Tender no.	Specifications & quantity of the item	Estimated cost (INR)
1.	<b>CUSB/S&amp;P/CHEM/Tender/35/2016-17</b> Supply & Installation of laboratory equipments.	ANNEXURE-II (A)	91 lakhs

The tender documents (non-transferable) along with detailed specifications and terms & conditions (available on) can be obtained from CUSB website **www.cusb.ac.in**. Forms can be downloaded and used. Note the following important dates.

1. Date of commencement of Tender : **01/02/2017**
2. Last date and time for receipt of Tender Document : **27/02/2017 up to 4.00 pm.**

Date: 01/02/2017

(Registrar)



**CENTRAL UNIVERSITY OF SOUTH BIHAR**  
**(NOTICE INVITING TENDER)**

On behalf of CUSB, sealed item rate tenders from manufactures (or their 'authorized' dealers by submitting letters/certificates, in original, from the manufacturers that they have been authorized to quote in response to this NIT) for the items mentioned in **Annexure – II (A)** are invited:

<b>Sr. No.</b>	<b>Tender no.</b>	<b>Specifications &amp; quantity of the item</b>	<b>Estimated cost (INR)</b>
1.	<b>CUSB/S&amp;P/CHEM/Tender/35/2016-17</b> Supply & Installation of laboratory equipments.	ANNEXURE-II (A)	91 lakhs

The Tender Documents for items will be on two-Bid System consisting of Technical Bid and Price Bid. The Tender Documents will be submitted item-wise in two separate sealed covers clearly mentioning on the envelope the details of items for which bid is submitted. Any firm may bid for any number of items against the purchase of Tender Document but each offer must be item-wise in two bid cover enclosing item-wise EMD with Technical Bid.

The tender documents (non-transferable) along with detailed specifications and terms & conditions (available on) can be obtained from CUSB website [www.cusb.ac.in](http://www.cusb.ac.in). Forms can be downloaded and used along with payment of non-refundable tender price as mentioned below. The Tender price may be paid in the form of Bank Draft in favour of **Central University of South Bihar payable at Patna**.

- a) Price of Tender Document: **Rs. 500/-** (five hundred, Non-refundable)
- b) Date of commencement Tender : **01/02/2017**
- c) Last date and time for receipt of Tender Document : **27/02/2017 upto 4.00 pm.**
- d) The tender should be addressed to the undersigned and should be delivered in person or sent by registered post so as to reach the University on/before **27/02/2017 upto 4.00**. No tender will be accepted after the due date and time.

All Tender Documents must be accompanied by the Bid Security Form/Earnest Money Deposit (Refundable) **equivalent to 2.5% of estimated cost of each item**. The Earnest Money Deposit is to be paid in the form of Bank Draft in favour of the **Central University of South Bihar payable at Patna**. The Bid Security Form/Earnest Money Deposit Bank Draft must be enclosed with Technical Bid. The details of Bank Draft Number of Earnest Money Deposit must be endorsed on top of envelope containing Technical Bid (EMD must be submitted separately for each item).

The University shall not be responsible for any delay in receiving Bids/sending of Tender Document by post.

The University reserves the right to accept or reject any bid, without assigning any reason thereof. No correspondence in this regard will be entertained.

Earnest Money shall be forfeited in case it is found at any stage that information/particulars regarding supply of tendered item(s) are false.

Date: 01/02/2017

**(Registrar)**

**Notice inviting Quotations for various items/equipments****Specifications:**

<b>Sl. No.</b>	<b>Item description with specification</b>	<b>Qty.</b>	<b>Total estimated value (Rs.)</b>	<b>EMD (INR)</b>
1	Fume Hood	4	1200000	30000
	(Specifications as per annexure-I)			
2	Laboratory Work Bench (Chemistry)	5	1600000	40000
	(Specifications as per annexure-II)			
3	Argon Gas Cylinder with regulator	1	30000	750
	(Specifications as per annexure-III)			
4	Nitrogen Gas Cylinder with regulator	1	30000	750
	(Specifications as per annexure-IV)			
5	Gas Cylinder Brackets	2	5000	125
	(Specifications as per annexure-V)			
6	Cylinder Trolley	1	12000	300
	(Specifications as per annexure-VI)			
7	Stools	30	150000	3750
	(Specifications as per annexure-VII)			
8	Chemical Storage Cabinets	10	250000	6250
	(Specifications as per annexure-VIII)			
9	Laboratory Refrigerator (2°C to -8°C)	1	100000	2500
	(Specifications as per annexure-IX)			
10	Weighing Balance	2	200000	5000
	(Specifications as per annexure-X)			
11	Distillation units	4	600000	15000
	(Specifications as per annexure-XI)			
12	Digital Polari meter	1	600000	15000
	(Specifications as per annexure-XII)			
13	UV-Vis Absorption Spectrophotometer	1	500000	12500
	(Specifications as per annexure-XIII)			
14	20 kVA UPS online one hour power back-up	1	500000	12500
	(Specifications as per annexure-XIV)			
15	ChemOffice-16 Professional 5 User Academic Perpetual License (Proprietary Software)	1	900000	22500
16	Desktop Computers,	5	125000	22500
	500 GB HDD, RAM 4 GB, OS: Windows 8 or 10, Preloaded with MS Office			

17	Melting Point Apparatus	1	100000	2500
	(Specifications as per annexure-XV)			
18	Ultrasonic Cleaner	1	15000	375
	(Specifications as per annexure-XVI)			
19	Hot Air Oven	1	30000	750
	(Specifications as per annexure-XVII)			
20	Vacuum Oven	1	40000	1000
	(Specifications as per annexure-XVIII)			
21	Bench-top pH Meter-cum-Potentiometer	5	125000	3125
	(Specifications as per annexure-XIX)			
22	Oil-Free Diaphragm Pump	2	80000	2000
	(Specifications as per annexure-XX)			
23	Ice Flakes Maker	1	150000	3750
	(Specifications as per annexure-XXI)			
24	Benchtop Conductivity Meter	5	100000	2500
	(Specifications as per annexure-XXII)			
25	Benchtop Centrifuge	1	35000	875
	(Specifications as per annexure-XXIII)			
26	Heating Mantle	10	50000	1250
	(Specifications as per annexure-XXIV)			
27	Water Bath	2	60000	1500
	(Specifications as per annexure-XXV)			
28	Rotary Evaporator and vacuum pump with chiller (0 °C to -20 °C)	1	500000	12500
	(Specifications as per annexure-XXVI)			
29	Muffle Furnace (Rectangular)	1	350000	8750
	Annexure-XXVII			
30	Digital Furnace (upto 500°C) Annexure - XXVIII	1	200000	5000
31	Magnetic Stirrer with Ceramic Hot Plate	5	300000	7500
	(Specifications as per annexure-XXIX)			
32	Commercial LPG cylinder with regulator	2	5000	125

**TENDER DOCUMENT FOR VARIOUS ITEMS/EQUIPMENTS**

BID REFERENCE	CUSB/S&P/CHEM/Tender/35/2016-17
DATE OF COMMENCEMENT OF BIDDING	01/02/2017
LAST DATE AND TIME FOR RECEIPT OF BIDS	27/02/2017 up to 4.00 p.m.
ADDRESS FOR COMMUNICATION	Registrar Central University of South Bihar BIT Patna Campus P.O.: B. V. College Patna – 800014 Contact Number: 0612-2784105



# CENTRAL UNIVERSITY OF SOUTH BIHAR

CENTRAL PURCHASE ORGANIZATION

PATNA - 800014

TO BE RETURNED  
WITH QUOTATION

Following proforma should be filled in and duly signed by the firm and sent alongwith the quotation.  
(Please refer to the detailed instructions/notes before filling this proforma).

1. Validity of the offer :
2. Approximate Delivery Period :
3. (a) Whether rates have been quoted F.O.R. site and covers packing forwarding and insurance charges. : YES / NO  
(b) If not, please mention the same :
4. (a) Whether the prices are inclusive of Sales Tax/VAT & other taxes. : YES / NO  
(b) If not, kindly specify the amount / rate :
5. If the Sales Tax/VAT is charged extra, declaration for Charging Sales Tax Correctly, attached. : YES / NO
6. (a) Whether supply will be made directly or through any Local / Regional / Authorized Dealer / Stockiest : Directly/Stockiest/Authorized Dealer  
(b) If through a Stockiest / Dealer : -
  - (i) Name and full address of the Party :
  - (ii) Whether the order to be placed with the : Principal / Stockiest / Dealer
  - (iii) Who will raise the bill : Principal / Stockiest / Dealer
  - (iv) Cheques will be drawn in favour of : Principal / Stockiest / Dealer
  - (v) Whether any Delivery, Packing and Forwarding Charges will be payable to local Stockiest/Dealer : YES / NO  
(Please specify the amount/percentage etc.)
7. **Our terms of payment: 100% payment after delivery and successful installation report submitted by the user department and after approval of the Competent Authority.**
8. Whether any Excise Duty is payable on the items. : YES / NO  
If yes, indicate the amount / percentage. : .....%  
(Please note that excise duty shall be paid only when it is clearly shown in the invoice separately)
9. Whether any installation charges are payable extra. : YES/ NO  
If yes, amount to be specified. : .....

10. Whether any discount for educational institution offered on the printed price list of the manufacturer. : YES/ NO  
 If yes, mention the amount / percentage. : .....%
11. Whether the product is on DGS &D/D.I. Rate contract. : YES / NO  
 If yes, please enclose a photocopy of the same.
12. Whether the product bears I.S.I. Mark. : YES / NO  
 If yes, please mention the I.S.I. License no. : .....
13. (a) Whether the firm is Sales Tax payer. : YES / NO  
 If yes, please mention the Sales Tax Numbers. : .....
- (b) Whether the Local Dealer(s) is / are Sales Tax payer(s) : YES / NO  
 If yes, please mention the Sales Tax numbers of each : .....
14. Whether certificate of Quality Control enclosed YES/ NO
15. Whether printed / authenticated price list of the Firm's Products and Catalogue etc. enclosed. : YES / NO

***Signature with Seal.***

## TENDER DOCUMENT FOR VARIOUS ITEMS/ EQUIPMENTS

### INVITATION FOR BIDS

1. Sealed bids in two parts (techno commercial unpriced & priced bids) are invited from eligible bidders for the items mentioned in **Annexure – II (A)**-
2. Interested eligible Bidders may obtain further information from and inspect the bidding documents at the office of the **(Registrar), CUSB Patna.**
3. Each set of tender documents (non-transferable) along with detailed specifications and terms & conditions (available on) can be obtained from **CUSB website [www.cusb.ac.in](http://www.cusb.ac.in)**. Forms can be downloaded and used along with payment of non-refundable tender price as mentioned below. The Tender price may be paid in the form of Bank Draft in favour of **Central University of South Bihar payable at Patna.**
3. All bids must be accompanied by earnest money deposit as specified above and must be delivered to the above office upto **4.00 pm of 27/02/2017.**
4. The University reserves the right to accept or reject any or all tenders either in part or in full without assigning any reasons therefore.
5. This Tender Document contains the following:
  - A. Instructions to Bidders
  - B. General conditions of contract
  - C. Tender form (Techno commercial unpriced Bid)
  - D. Tender form (priced Bid)
  - E. Check-list for Bid/Tender submission
  - F. Bank guarantee form



**TO BE RETURNED  
ALONGWITH THE OFFER**

## **CERTIFICATES**

### ***WE CERTIFY THAT:***

- 1.** We will not sell the product (s) to other institutions, bodies and also in the market on the rates less than the prices quoted by us to the University.
- 2.** The goods on which Sales Tax has been charged are not exempted for payment of Sales Tax under C.S.T. Act or Bihar VAT Act or the rules made there under and the amount mentioned on account of Sales Tax on goods is not more than what is payable under the provisions of the relevant Act or Rules made there under.
- 3.** The rate of Excise Duty mentioned in the quotation is in accordance with the provisions of the rules in all respects and the same is payable to the Excise Authorities in respect of the stores.
- 4.** The goods / Stores / articles offered under the rate contract shall be of the best quality and workmanship and their supply be strictly in accordance with the technical specifications and particulars as detailed in the quotation and also certificate of quality control system attached.
- 5.** The information furnished by us in the quotation are true and correct to the best of our knowledge and belief.
- 6.** We have read and understood the rules, regulations, terms and conditions of rate contract as applicable from time to time and agree to abide by them.

***Authorized Signatory***  
(Seal)



**CENTRAL UNIVERSITY OF SOUTH BIHAR**

**TECHNICAL BID PROFORMA**

NIT No.: CUSB/S&P/CHEM/Tender/35/2016-17,

Dated: 01/02/2017

Category \_\_\_\_\_ Category Code \_\_\_\_\_

1. Name of the Organisation \_\_\_\_\_

2. a) Head Office / Registered Office \_\_\_\_\_

Telephone No/mobile No. \_\_\_\_\_

Fax No. \_\_\_\_\_

Email \_\_\_\_\_

Web site (if any) \_\_\_\_\_

Date of Establishment \_\_\_\_\_

Branch Office in Patna, if any  
(Provide Complete Address) \_\_\_\_\_

Telephone No. \_\_\_\_\_

Fax No./Email \_\_\_\_\_

3. Name of Chief Executive /  
Proprietor / Partners with  
Designation \_\_\_\_\_

Telephone No./Mobile No. \_\_\_\_\_

Fax No./ Email \_\_\_\_\_

4. Name of Contact Person \_\_\_\_\_

Telephone No./Mobile No \_\_\_\_\_

Fax No./Email : \_\_\_\_\_

**5. Type of Organization**

**Documents to be enclosed**

- a) Proprietary  Trade License
- b) Partnership  Partnership Deed, Trade License
- c) Private Limited Company  Memorandum of Article
- d) Public Limited Company  Certificate of Registration  
Trade License
- e) Public Sector  Trade License

**6. Nature of Business (tick the relevant)**

Manufacturing	<input type="checkbox"/>	Service	<input type="checkbox"/>	Dealership	<input type="checkbox"/>
Stockist	<input type="checkbox"/>	Indian Agent	<input type="checkbox"/>	Indian Branch Office	<input type="checkbox"/>
Others Pl. Specify					

**7. Class / Type of Product / Materials Manufactured / Sold / Serviced/ Fabricated :**

Scientific Equipment	<input type="checkbox"/>	Electronics	<input type="checkbox"/>	Lab Consumables & Chemicals	<input type="checkbox"/>
Electrical Items	<input type="checkbox"/>	Computer Periferals	<input type="checkbox"/>	Computers	<input type="checkbox"/>
Laboratory Equipments	<input type="checkbox"/>	Office Automation Product	<input type="checkbox"/>	Electrical Works	<input type="checkbox"/>
Sport Materials	<input type="checkbox"/>	Water Coolers	<input type="checkbox"/>	Air-conditioners	<input type="checkbox"/>
AV Equipments	<input type="checkbox"/>	Boards	<input type="checkbox"/>	Other, please specify.....	<input type="checkbox"/>

**Audited Annual Turnover during last 3 years (Rs. In Lakhs ) (Enclose Chartered Accountant's certification & Income Tax Return Copy)**

Year	Rupees in Lakhs
2015-16	
2014-15	
2013-14	

**8. Commercial Information (Enclose Attested Copy wherever Applicable)**

S.No.	Information	Details
1	GST Regn, No.	
2	CST / VAT Regn. No.	
3	State ST Regn. No	
4	TIN No.	
5	Excise Registration No. Trade / Factory License No.	
6	Service Tax Regn.No.	
7	PAN No.	
8	Details of Registration Certificate with DGS&D/NCCF	
9	SSI/NSIC Certificate	
10	Current dealership agreement with Principal Letter No. / Date / Valid upto	
11	Relevant IISI/ SO Certificate, if any	
12	<u>Bank Details :</u> Account No.	
13	Name of Bank & Branch	
14	IFSC Code	

Signature of authorized representative: ..... Date: .....

# INSTRUCTIONS TO BIDDERS

## **A. Introduction**

### **1. Qualification criteria/ Eligible Bidders**

- 1.1 This Invitation for Bids is open to all manufacturers & their dealers authorized to quote in response to this NIT.
- 1.2 Copies of valid Central/State sales tax registration certificate, Income tax clearance certificate, proof of manufacturing unit/dealership & general order suppliers and copies of two major supply orders valuing more than Rs. 20000/- executed during the preceding two years for Govt. depts. /PSUs and Central Autonomous bodies have to be submitted.

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

- 2.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and "the Purchaser", will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

## **B. The Bidding Documents**

### **3. Cost of Bidding Documents**

Interested eligible bidders may purchase the bidding documents on payment of the cost of bidding documents as indicated in the invitation for bids. The cost of bidding documents should be submitted in the form of a Demand Draft in favour of the Registrar, CUSB payable at Patna.

### **4. Content of Bidding Documents**

4.1 The goods required, bidding procedures and contract terms are prescribed in the bidding documents. In addition to the Invitation for Bids, the bidding documents include:

- (a) Instruction to Bidders (ITB);
- (b) General Conditions of Purchase (GCP);
- (c) Tender form (technical bid).
- (d) Tender form (financial bid)

4.2 The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the Bidder's risk and may result in rejection of its bid.

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

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

5.2 All prospective bidders who have received the bidding documents will be notified of the amendment in writing, which will be binding on them.

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

## **C. Preparation of Bids**

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

6.1 The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser shall be written in English language.

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

7.1 **Techno commercial unpriced bid and priced Bids:** The bids are to be submitted in two parts in separate sealed envelopes i.e. Techno commercial unpriced bid and priced Bids.

(a) Techno commercial unpriced bid along with Earnest Money Deposit (EMD) as shown in invitation to bids may be submitted either through Bank Guarantee valid for the duration of contract as per enclosure to the bidding documents or by a demand draft of Nationalised Bank in favour of the **Registrar, CUSB payable at Patna**. If the EMD is not received along with the technical bid, such bid will not be considered. The samples of all the items shown in the schedule of requirements of each tender should also accompany the techno commercial unpriced bid in a separate sealed envelope

(b) Priced bid.

7.2 **Techno commercial unpriced bid:** The Techno commercial unpriced bid prepared by the bidder shall be provided in the following Model Response format:

#### **Model Response format**

(a) Standing of each Bidder Manufacturer/Dealer and past experience in supply of the material (certificates to be enclosed), proof of manufacturing Unit/Dealership letter and general order supplier.

(b) List of other Govt. Departments, Public Sector units and Central Autonomous Bodies for which the bidder is supplying material or having the similar type of contracts and a certificate regarding the satisfactory performance of the contract.

(c) Copy of the audited balance sheet of the vendor for the previous financial year indicating the turnover in supply of the material.

(d) Details of Permanent Account Number and latest income tax clearance certificate.

(e) Details of S.T. No. along with a copy of certificate to be attached.

(f) Submission of samples if required, for all items indicated in the schedule of requirements. The make of items proposed to be supplied should be indicated in the format of the schedule of requirements and submitted along with the techno commercial un priced bid without indicating the pricing components.

### **7.3 Priced Bid**

The priced bid shall comprise the techno commercial bid along with the price component indicating the Unit prices for each and every item indicated in the schedule of requirements.

- (a) The prices quoted must be net per unit as shown in the Schedule and must include all charges for delivery at the designated stores.
- (b) The rate must be stated for each item separately both in words and figures. If there is a discrepancy between the price quoted in word and figures the higher price quoted will be treated as final.
- (c) The price quoted by the tenderers should be exclusive of Excise Duty & Sales Tax. However, the Excise Duty & Sales Tax payable should be quoted separately in the schedule enclosed.
- (d) Quoted prices should be firm and inclusive of octroi, freight and forwarding charges, handling charges, loading and unloading charges, insurance charges etc.
- (e) The prices once accepted by the University shall remain valid till the successful execution of the order and till supplies are fully effected and accepted or 12 months from the date of acceptance of tender whichever is later. The University shall not entertain any increase in the rates during the period. However, in the event there is a reduction or increase in Government levy/duties during the period of execution of the order, the rates shall be suitably adjusted with effect from the date notifying the said reduction or increase in the Government levy/excise duty. The quantity given in the schedule is approx annual requirement, which can be reduced or increased by 50%.

## **NOTE**

**1. THE TWO BIDS (BOTH TECHNO COMMERCIAL UNPRICED BID) ALONG WITH EARNEST MONEY DEPOSIT (EMD) AND SAMPLES (IF REQUIRED) AND THE PRICED BID SHOULD BE SUBMITTED SEPARATELY FOR EACH TENDER.**

**2. CONDITIONAL BIDS WILL NOT BE ACCEPTED**

### **8. Bid Prices**

8.1 The Bidder shall indicate on the Schedule of requirements, the unit prices of the goods it proposes to supply under the Contract and enclose it with the priced bid.

8.2 Prices indicated on the Price Schedule shall be entered separately in the following manner:

(i) the prices quoted must be net per unit as shown in the schedule of requirements and must include all charges for delivery at the designated stores.

(ii) any Indian duties, sales and other taxes which will be payable on the goods if this Contract is awarded;

8.3 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account.

### **9. Bid Currencies**

9.1 Prices shall be quoted in Indian Rupees only. In case of direct import the prices may be indicated in the foreign currency. The University may, at its discretion, arrive at approximate Rupee equivalent on the basis of exchange rate on the date of opening of price bid.

### **10. Period of Validity of Bids**

10.1 Bids shall remain valid for 90 days after the date of bid opening prescribed by the Purchaser. A bid valid for a shorter period shall be rejected by the Purchaser as non-responsive.

10.2 In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. A Bidder may refuse the request without forfeiting its EMD. A Bidder granting the request will not be required nor permitted to modify the bid.

10.3 Bid evaluation will be based on the bid prices without taking into consideration the above modifications.

## ***D. Submission of Bids***

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

11.1 The outer envelope containing Techno commercial unpriced bid along with EMD & samples, if required, and priced bid shall be addressed to Registrar, Central University of South Bihar and shall indicate tender number and due date.

11.2 The inner envelope shall indicate the name and address of the bidder, tender number due date and contents i.e. "Techno commercial unpriced bid along with EMD" and "Priced bid".

11.3 If the outer envelope is not sealed and marked as required, the Purchaser will assume no responsibility for the bid's misplacement or premature opening.

#### **12. Deadline for Submission of Bids**

12.1 Bids must be received by the Purchaser at the address specified not later than the time and date specified in the Invitation for Bids. In the event of the specified date for the submission of Bids being declared a holiday for the Purchaser, the Bids will be received up to the appointed time on the next working day.

12.2 The Purchaser may, at his discretion, extend this deadline for submission of bids by amending the bid documents in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

#### **13. Late/Delayed Bids**

13.1 Any bid received by the Purchaser after the deadline for submission of bids prescribed by the Purchaser, pursuant to Clause 5 of invitation of bids will be rejected and/or returned unopened to the Bidder.

#### **14. Modifications and Withdrawal of Bids**

14.1 The Bidder may modify or withdraw its bid after the bid's submission, provided that written notice of the modification or withdrawal is received by the Purchaser prior to the deadline prescribed for submission of bids.

14.2 The Bidder's modification or withdrawal notice shall be prepared, marked and dispatched in a sealed envelope. A withdrawal notice may also be sent by telex or cable or fax but followed by a signed confirmation copy, post marked not later than the deadline for submission of bids.

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

14.4 No bid may be withdrawn in the interval between the deadline for submission of bids and the expiry of the period of bid validity specified by the Bidder on the bid form. Withdrawal of a bid during this interval may result in the Bidder's forfeiture of its EMD.

### ***E. Bid Opening and Evaluation of Bids***

#### **15. Opening of Techno commercial unpriced Bids**

15.1 The purchaser will open all techno commercial unpriced bids in the first instance.

#### **16. Clarification of Bids**

16.1 During evaluation of the bids, the purchaser may, at its discretion, ask the Bidder for clarification of its bid. The request for clarification and the response shall be in writing and no change in price or substance of the bid shall be sought, offered or permitted.

16.2 No Bidder shall contact the purchaser on any matter relating to its bid from the time of the bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the University it should be done in writing.

16.3 Any effort by a Bidder to influence the purchaser in its decisions on bid evaluation, bid comparison or contract award decisions may result in rejection of the Bidder's bid.

#### **17. Evaluation of Techno commercial unpriced Bid**

17.1 Prior to the detailed technical evaluation, the purchaser will determine the substantial responsiveness of each bid. A substantially responsive bid is one, which conforms to all the terms and conditions of the Bidding Documents without material deviations.

17.2 The purchaser will reject a bid determined as not substantially responsive.

17.3 The bidders may be called for discussion and may be allowed to modify their technical bids to suit the organization's requirement. The idea is to arrive at a threshold level of acceptability above which all the bidders shall be treated on par. Those whose technical specifications do not reach the threshold level of acceptability shall be rejected as technically unsuitable. The price bids of the bidders who finally emerge as technically acceptable shall be opened, evaluated and the contract awarded to the lowest evaluated bidder.

17.4 The bidders short-listed by the purchaser based on evaluation of their technical bids may be called for detailed discussions with a team selected for the purpose, at a specified date, time and venue, if needed.

#### **18. Opening of Priced Bids**

18.1 The Purchaser will open the Priced Bids of only those bidders whose techno commercial bids have been found to be substantially responsive.

18.2 The priced Bids of the technically qualified bidders shall be opened by the tender committee.

#### **19. Evaluation and Comparison of priced Bids**

19.1 Arithmetical errors will be rectified on the following basis: If there is a discrepancy between words and figures, whichever is the higher of the two shall be taken as bid price. If the Vendor does not accept the correction of errors, its bid will be rejected

19.2 Bidders shall state their bid price for the payment schedule outlined in the Clause 14 of General Conditions of Contract. Bids will be evaluated on the basis of this base price. Bidders are, however, permitted to state an alternative payment schedule and indicate the reduction in bid price they wish to offer for such alternative payment schedule. The purchaser may consider the alternative payment schedule offered by the selected Bidder but it may not be binding on the purchaser.

19.3 The purchaser, at its option may ask some more bidders to match the rates of the lowest bidder for creating parallel suppliers.

**20. Purchasers right to accept any bid and to reject any bid or all bids**

20.1 The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Purchaser's action.

**21 Award Criteria**

21.1 Subject to Clause 19, the purchaser will award the Contract to the successful Bidder whose bid has been determined to be substantially responsive and has been determined as the best evaluated bid provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.

**22. Notification of Award**

22.1 Prior to the expiration of the period validity, the purchaser will notify the successful Bidder in writing by letter or by fax, to be confirmed in writing by speed post or hand delivered letter, that its bid has been accepted.

**23. Factors Affecting the Award of Supply**

23.1 The bidder should have its own Contract support facilities. The support facilities should be fully owned and managed by the bidder.

23.2 Conformity with the Request for Bid/Tender required and conditions.

23.3 The assessment based on the response to Model Response Outline.

23.4 The assessment of the capability of the bidder to meet the terms and conditions.

23.5 The bidders must have executed similar orders, for which the bidder is quoting, as indicated in clause 1 for Govt./Semi-Govt./Autonomous Organizations.

23.6 The cost and the discount offered, if any.



## **GENERAL CONDITIONS OF PURCHASE**

### **1. Definitions**

1.1 In this Purchase, the following terms shall be interpreted as indicated:

- (a) "The order" means the agreement entered into between the Purchaser and the Supplier including all the attachments and appendices and all documents incorporated as per notification of award.
- (b) "The Purchase Price" means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligations;
- (c) "The Goods" means all the items, which the Supplier is required to supply to the Purchaser under the Contract;
- (d) "Services" means services ancillary to the supply of the Goods, such as transportation and insurance, and any other incidental services training and other obligations of the Supplier covered under the Contract;
- (e) "GCP" means the General Conditions of Purchase contained in this section.
- (f) "The Purchaser" means the organization purchasing the Goods i.e **CENTRAL UNIVERSITY OF SOUTH BIHAR, PATNA.**
- (g) "The Purchaser's country" is India.
- (h) "The Supplier" means the individual or firm supplying the Goods and Services.
- (i) "Day" means calendar day.

### **2. Application**

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

### **3. Standards**

3.1 The Goods supplied under this Purchase shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, to the authoritative standard appropriate to the Goods' country of origin and such standards shall be the latest issued by the concerned Institution.

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

4.1 The Supplier shall not, without the Purchaser's prior written consent, disclose the Purchase, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.

4.2 The Supplier shall not, without the Purchaser's prior written consent, make use of any document or information except for purposes of performing the Contract.

4.3 Any document, other than the Contract itself, shall remain the property of the Purchaser and shall be returned (in all copies) to the Purchaser on completion of the Supplier's performance under the Contract if so required by the Purchaser.

### **5. Patent Rights**

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

### **6. Submission of the bids.**

6.1 All bids complete in all respect must reach the purchaser within the last date and time of receipt of bid. No extension shall be allowed for any reason what so ever. Late tenders/delayed bids and tenders received without earnest money etc. shall be rejected.

### **7. Inspections and Tests**

7.1 The Purchaser or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications at no extra cost to the Purchaser.

7.2 The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at point of delivery and/or at the Goods final destination. If conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data shall be furnished to the inspectors at no charge to the Purchaser.

7.3 Should any inspected or tested Goods fail to conform to the specifications, the Purchaser may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.

7.4 The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at Project Site shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.

7.5 Nothing in GCP Clause 7 shall in any way release the Supplier from any warranty or other obligations under this Contract.

### **8. Consequences of rejection**

8.1 If in the event the stores are rejected by the purchaser at the destination and the supplier fails to make satisfactory supplies within the stipulated period of delivery, the purchaser will be at liberty to :

- (a) Allow the supplier to resubmit the stores in replacement of those rejected, within a specified time without any extra cost to the purchaser or
- (b) Reject the material, which shall be final and binding on the contractor.
- (c) Procure the rejected materials of comparable quality from the open market/Govt. stores and the supplier shall be liable to pay the difference in price over the RC prices or get the amount adjusted from the outstanding bills of the supplier, if any or EMD.

#### **9. Packing**

9.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

9.2 The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be provided for in the Contract including additional requirements, in any subsequent instructions ordered by the Purchaser.

#### **10. Delivery and Documents**

10.1 The Supplier shall make delivery of the Goods within 12 days from the placement of purchase order in pursuance of the notification of award. The purchase order would be placed after assessing the requirements on quarterly basis. However, the supplier shall also arrange to execute all orders on priority basis which would be placed to meet any emergent requirements.

10.2 In case the purchaser decides to conclude parallel rate contracts, then the requirements would be split on different firms on equitable basis as per the discretion of the purchaser.

10.3 The delivery of Stores shall be affected at the premises of the University free of all delivery charges and within the stipulated time and as may be elucidated in the confirmed order, accompanied by a delivery challan. No extension of time for delivery of Stores shall normally be accorded.

**Time and date of delivery – the essence of the contract:** The time for and the date of delivery of the stores stipulated shall be deemed to be of the essence of the contract and delivery must be completed not later than the date(s) specified.

#### **11. Insurance**

11.1 The Goods supplied under the Contract shall be fully insured in Indian Rupees against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery. The insurance shall be obtained by the suppliers in an amount equal to 110% of the value of the goods from “warehouse to warehouse” (final destinations) on “all risks” basis including war risks and strikes.

#### **12. Transportation**

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

#### **13. Warranty**

13.1 The Supplier warrants that the Goods supplied under this Contract are new, unused, of the most recent or current models and that they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Supplier further warrants that all Goods supplied under this Contract shall have no defect arising from design, materials or workmanship or from any act or omission of the Supplier, that may develop under normal use of the supplied Goods in the conditions prevailing in India.

13.2 This warranty shall remain valid for 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 the Contract, unless specified otherwise.

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

13.4 Upon receipt of such notice, the Supplier shall with all reasonable speed, repair or replace the defective Goods or parts thereof, without any extra cost to the Purchaser.

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

#### **14. Payment**

14.1 The payment shall be made after inspection of the materials and satisfactory performance.

14.2 The Supplier's request(s) for payment shall be made to the Purchaser in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and the Services performed, and by documents, submitted pursuant to GCC Clause 10, and upon fulfillment of other obligations stipulated in the contract.

#### **15. Prices**

15.1 Prices charged by the Supplier for Goods delivered and Services performed under this Purchase shall not vary from the prices quoted by the Supplier in his bid.

#### **16. Change Orders**

16.1 The Purchaser may at any time, by written order given to the Supplier, make changes within the general scope of the Contract in any one or more of the following:

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

16.2 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 delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this clause must be asserted within thirty (30) days from the date of the Supplier's receipt of the Purchaser's change order.

#### **17. Contract Amendments**

17.1 Subject to GCP Clause 16, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

#### **18. Assignment**

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

#### **19. Subcontracts**

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

#### **20. Delays in the Supplier's Performance**

20.1 Delivery of the Goods and performance of the Services shall be made by the Supplier in accordance with the time schedule specified by the Purchaser as per GCP clause 10.

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

20.3 Except as provided under GCP Clause 23, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of penalty pursuant to GCP Clause 21, unless an extension of time is agreed upon pursuant to GCC Clause 20.2 without the application of liquidated damages.

#### **21. Penalty**

21.1 Subject to GCP Clause 23, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as penalty, a sum equivalent to 1% per week and the maximum deduction is 10% of the contract price of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance. Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to GCC Clause 22.

#### **22. Termination for Default**

22.1 The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part:

- (a) If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the purchase order, or within any extension thereof granted by the Purchaser pursuant to GCP Clause 20; or
- (b) If the Supplier fails to perform any other obligation(s) under the Contract.
- (c) If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

'For the purpose of this Clause:

"Corrupt practice" means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution.

"Fraudulent practice: a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;"

22.2 In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 22.1, the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue the performance of the Contract to the extent not terminated.

### **23. Force Majeure**

23.1 Notwithstanding the provisions of GCP Clauses 20 & 21, the Supplier shall not be liable for imposition of liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

23.2 For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

23.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

### **24. Termination for Insolvency**

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

### **25. Termination for Convenience**

25.1 The Purchaser, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

25.2 The Goods that are complete and ready for shipment within 30 days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices.

### **26. Resolution of Disputes**

26.1 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.

26.2 If, after thirty (30) days from the commencement of such informal negotiations, the Purchaser and the Supplier have been unable to resolve amicably a Contract dispute, either party may require that the dispute be referred for resolution to the formal mechanisms as specified below. These mechanisms may include, but are not limited to, conciliation mediated by a third party, adjudication in an agreed national or international forum, and national or international arbitration.

26.3 In case of Dispute or difference arising between the Purchaser and a 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.

### **27. Governing Language**

27.1 The contract shall be written in English language. Subject to GCC Clause 28, English language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract which are exchanged by the parties shall be written in the same language.

### **28. Applicable Law**

28.1 The contract shall be governed by the Law of Contract for the time being in force.

28.2 Irrespective of the place of delivery, the place of performance or place of payment under the contract, the contract shall be deemed to have been made at the place from which the acceptance of tender has been issued.

28.3 Jurisdiction of Courts: The courts of the place from where the acceptance of tender has been issued shall alone have jurisdiction to decide any dispute arising out of or in respect of this contract.

28.4 One month notice will be given by either party for termination of Contract during the tenure of Contract for breach of Clause or otherwise.

### **29. Taxes and Duties**

29.1 Suppliers shall be entirely responsible for all taxes, duties, license fees, octroi, road permits, etc., incurred until delivery of the contracted Goods to the Purchaser.

30. Submission of Performance Bank Guarantee as per GFR Rules 2005 (if applicable).

31. All disputes in this connection shall be settled in Patna Jurisdiction only.

**TENDER FORM**  
**(Techno commercial unpriced Bid)xc**  
(On the letter head of the firm submitting the bid)  
Tender No.....

To  
The \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Dear Sir,

1. I/We hereby offer to supply the items as listed in the schedule to this tender hereto/portion thereof as you may specify in the acceptance of Tender at the price given in the said Schedule and agree to hold this offer open for a period of 90 days from the date of opening of the tender. I/we shall be bound by a communication of acceptance issued by you.
2. I/We have understood the Instruction to bidders and Conditions of Contract in the form as enclosed with the invitation to the tender and have thoroughly examined the specifications quoted in the Schedule hereto and am/are fully aware of the nature of the goods required and my/our offer is to supply the goods strictly in accordance with the specifications and requirements.
3. A crossed Bank Draft in favour of the Registrar, CUSB for Rs. ....  
(Rupees.....only) as Earnest Money is enclosed. The Draft is drawn on .....Bank payable at Patna
4. The following have been added to form part of this tender.
  - (a) Samples of items quoted for, as per instructions provided in the schedule of requirement.
  - (b) Schedule of requirements, quoting the make only duly signed and stamped.(without indicating price)
  - (c) Income Tax clearance certificate.
  - (d) Copy of last audited balance sheet.
  - (e) Copy of Valid Central/State sales tax registration certificate.
  - (f) Copy of relevant major purchase orders valuing more than Rs. 20000/- executed during last two years for Govt. Deptts., PSUs & Central Autonomous bodies..
  - (g) Proof of manufacturing Unit, dealership certificate/general order suppliers .
  - (h) Statement of deviations from financial terms & conditions, if any.
  - (i) Any other enclosure. (Please give details)
5. We undertake to execute all orders which have been placed to meet emergent requirements on priority basis.
6. Certified that the bidder is:  
A sole proprietorship firm and the person signing the bid document is the sole proprietor/constituted attorney of the sole proprietor,  
Or  
A partnership firm, and the person signing the bid document is a partner of the firm and he has authority to refer to arbitration disputes concerning the business of the partnership by virtue of the partnership agreement/by virtue of general power of attorney.  
Or  
A company and the person signing the document is the constituted attorney.  
(NOTE: Delete whatever is not applicable. All corrections/deletions should invariably be duly attested by the person authorized to sign the bid document).
7. We do hereby undertake, that, until a formal notification of award, this bid, together with your written acceptance thereof shall constitute a binding contract between us.

Yours faithfully,  
(Signature of bidder)

Dated this day of \_\_\_\_\_  
Address:.....  
.....  
Telephone: \_\_\_\_\_  
FAX \_\_\_\_\_  
E-mail \_\_\_\_\_

Company seal

**Tender Form**

(Priced Bid)

(On the letter head of the firm submitting the bid document)

To \_\_\_\_\_  
The \_\_\_\_\_

Ref: Tender No ..... Dated-----

Sir,

Having examined the bidding documents and having submitted the techno commercial unpriced bid for the same, we, the undersigned, hereby submit the priced bid for supply of goods and services as per the schedule of requirements and in conformity with the said bidding documents.

We hereby offer to supply the Goods/Services at the prices and rates mentioned in the enclosed schedule of requirement.

We do hereby undertake, that, in the event of acceptance of our bid, the supply of Goods/Services shall be made as stipulated in the schedule of requirement and that we shall perform all the incidental services.

The prices quoted are inclusive of all charges net F.O.R University. We enclose herewith the complete Financial Bid as required by you. This includes:

Price Schedule as per schedule of requirement.

Statement of deviations from financial terms and conditions.

We agree to abide by our offer for a period of 90 days from the date fixed for opening of the bid documents and that we shall remain bound by a communication of acceptance within that time.

We have carefully read and understood the terms and conditions of the bid document and we do hereby undertake to supply as per these terms and conditions. The Financial Deviations are only those mentioned in the statement of deviations from financial terms and conditions.

Certified that the bidder is:

A sole proprietorship firm and the person signing the bid document is the sole proprietor/constituted attorney of sole proprietor,

Or

A partnership firm, and the person signing the bid document is a partner of the firm and he has authority to refer to arbitration disputes concerning the business of the partnership by virtue of the partnership agreement/by virtue of general power of attorney,

Or

A company and the person signing the bid document is the constituted attorney.

(NOTE: Delete whatever is not applicable. All corrections/deletions should invariably be duly attested by the person authorised to sign the bid document.)

We do hereby undertake, that, until a formal notification of award, this bid, together with your written acceptance thereof, shall constitute a binding contract between us.

Dated this day of \_\_\_\_\_

Signature of Bidder

Details of enclosures

Full Address:

Telephone No.

Fax No.

E-mail:

COMPANY SEAL

## Checklist for Bid/Tender Submission

The following check-list must be filled in and submitted with the bid document:

### Pre-qualification Bid

1. Was the bid document issued to you? Yes/No
2. Have you attached the techno commercial unpriced bid form duly filled in appropriately ?  
Yes/No
3. Have you attached a copy of the last audited balance sheet of your firm Yes/No
4. Have you attached the details of the income tax clearance certificate, proof of manufacturing unit/ dealership letter/general order suppliers and copy of Central/State sales tax registration certificate( as per clause 1.2 of ITB)  
Yes/No
5. Have you attached the copies of relevant work orders from Govt. Deptt/PSUs and Central Autonomous Bodies.( as per clause 1.2 of ITB)  
Yes/No
6. EMD: Have you submitted EMD asked for- Yes/No
7. Have you submitted samples of all items indicated in the respective schedule of requirements.  
Yes/No
8. Have you enclosed the schedule of requirement indicating the make offered without indicating the pricing components along with the techno commercial unpriced bid ( as per clause 6 of ITB).  
Yes/No
9. Have you submitted the bids both techno commercial unpriced and priced bid separately for each tender?  
Yes/No
10. Have you enclosed the statement of deviations from financial terms and conditions, if any?  
Yes/No

### Priced Bid:

1. Have you signed and attached the priced bid form. Yes/No
2. Have you attached the schedule of requirements duly priced Yes/No

## Specifications: Fume Hood –Annexure - I

Description
Stainless Steel body Fume Chamber should have two parts.(i) Storage Base Cabinet. (ii) Upper working Chamber. Double wall construction with monkey grid, water, gas , electrical points and Granite work top.
<b>Design Structure:-</b> Aerodynamic, Floor mounted.
<b>Size: 6ft. length x 3ft. depth x 7.5ft. height</b>
<b>Construction (Exterior):</b> 316 grade Stainless Steel Angles structure. Outer wall should be fully covered with 316 Stainless Steel sheet.
<b>Construction (Interior):-</b> Chemicals & Heat resistant, Fire retardant , Smooth Finish Easily Cleanable Panels made out of 6mm thick non metallic non corrosive FRP sheet integral work walls. joints should be sealed by Silicon Rubber. One 6 inches square monkey grid net for holding apparatus made of S. S. 12 mm round welded pipe will be fixed back wall inside the chamber.
<b>Base Storage Cabinet:-</b> It should have a special design to receive the fume hood at its top. Complete Stainless Steel structure to support Fume hood. It should have two vertical compartments with two double skin hinged doors with lock and key facility.
<b>Door (shutter) :-</b> Concealed type counter balanced single frame with 6mm thick glass fitted door. Smooth & light sash operation. Clear open able. It should have two type of sliding facility (Horizontal & Vertical) and maximum opening system. It should be fixed with S.S. Cable, Plastic Channel and Nylon pulley.
<b>Motor:-</b> 1H.P.2800 rpm three phase 440 volts “Krilosker/ Bharat Bijile” Brand motor.
<b>Blower:-</b> Centrifugal blower of Delving type Corrosion resistant FRP body , FRP impeller. it should be capable of delivering the flow rate against all duct losses. The fans should be robust in construction and suitable for Continuous duty operation.
<b>Suction:-</b> 1200 to 1500 Cfm
<b>Baffle arrangement:-</b> Interstitial 3-point suction system(for light, normal& heavy fumes) with baffle for smooth and immediate exhaust of fumes.
<b>Ducting:-</b> Rigid and flexible PVC duct 15cm dia pipe length up to 10 ft.
<b>Temperature Withstand:-</b> 120 <sup>0</sup> C
<b>Flooring:-</b> Working table top should be covered by 18 mm thick ‘jet’ black Granite stone .One small Stainless Steel Sink size- 10” x 8” with remotely operated water valve, one gas valve and one compressed air valve.. Colour coded knob (as per DIN 12920 norms)
<b>Electrical Facility:-</b> One vapor proof 40 Watt Tube light set, Four/Two Nos 15amp Socket and Switch, one MCB and one motor starter. Cable entering port is easy access of cables from fume hood to electrical sockets
<b>Airflow Type:-</b> Air is introduced automatically Aerodyne type below the Sash through multi channel slots in airfoil, when the sash is closed.
<b>Servicing:-</b> All parts of Fume Chamber should be assembled by Nut & Screw such that In future any defective part can be easily replaced without major dissemble of the main structure.

**Note: Bidders are advised to visit the site to familiarize themselves with the site conditions.**



# **Laboratory Work Bench (Chemistry)- Annexure - II**

**General Description** – The steel frames, panels & shutters should be made from Prime Quality CRCA (Cold Rolled Close Annealed) Steel. All cabinet bodies should be of over closing design with fully knock down construction and having a main and add on construction to avoid any gaps in between two units. All units should be interlocking type construction to form a rigid integral structure. These units should be supported on wide base high grade plastic legs of diameter 40 mm. These legs should be height adjustable with a range of +/- 50 mm. Each unit should have a locking **facility with 180° and 10 lever cam lock mechanism.**

## **Specifications**

- **Overall Dimensions :** 15 ft (length) × 5 ft. (width) × 3.5 ft. (height)
- **Surface Treatment:** The complete M.S. material of cabinet to be pre – treated (degreased, Zinc Phosphated) and epoxy powder coated for better corrosion resistance. The thickness of powder coat to be 50 microns, which passes the test of Salt Spray for 1000 hours and having the Scratch Hardness of 3Kgs.
- **Cabinet frame:** Frame is a combination of 1.2 mm horizontal stiffeners and 0.8 mm vertical panel of CRCA MS sheet.
- **Cover panels:** End side panel, false panel and back panel of 0.8 mm thick CRCA MS sheet.
- **Shelves and Drawers:** CRCA shelves should have a load carrying capacity of 40 kg. The overall load carrying capacity of cabinet should be 80 Kg of UDL (40 kgs. on each shelf and 40 kgs. on bottom). The overall load carrying capacity of drawer should be 40 kgs. of UDL for a pair of ball slide.
- **Door Pulls:** Flush pulls for doors shall be of PVC, providing a recessed finger grip. Finger holes or slots machined into doors will not be acceptable.
- **Drawers:** The outer drawer and door head shall have plastic inserts with half round post forming to eliminate sharp raw edges of steel. Drawer and door, when closed, shall be over closing on the cabinets.
- **Slides:** High precision Double Extension Ball slides which enable the drawer to open fully. They should have passed more than 55000 cycles of Drawer Cycle test (forward & backward movements) with a 15kg load in the drawer.
- **Shutters:** Metal Shutters should be double walled and made up of 0.8mm thick CRCA MS sheet with profil inserts and 40-50 microns pure epoxy powder coated. It should have good scratch resistance, reasonable chemical resistance to acids, alkalis, organic solvents and heat resistance properties.
- **Hinges:** Hinges shall be made of MS with Cathode electrode deposition for better corrosion resistance. The hinges should be spring loaded with 105 degree opening.

Welding of hinges to door or case will not be accepted. Doors less than 36" in height shall be hung on one pair of hinges, and doors over 36" high shall be hung on 3 hinges in case of under storage cabinets.

- **Positive Catch:** All units to be with self-closing type spring loaded hinges. The hinge should close the doors once left at certain angles. No additional catch will be allowed in the units.
- **Shelf supports:** Shelf support clips shall be of nickel-plated steel.
- **Legs:** All Legs to be made of plastic with a load carrying capacity of 450 kg/each. All units to be on plastic legs for better clean ability of the lab area. Fully enclosed flush design will not be acceptable. Leg should be able take evenness of the floor. It should have at least 50mm adjustability.
- **Skirting:** It should be made up of Poly Vinyl Chloride that is light in weight & is not affected by water that comes in contact while cleaning the floor.
- **Support Bracket:** Granite /Reagent Support Brackets serve the purpose of supporting the granite with carrying the service lines. It should be made of 2 mm CRCA MS sheet with epoxy powder coating.
- **Configuration of Storage Units:** The storage units should be available in three configurations:

- Storage unit with one/two shutters and one adjustable shelf
- Storage unit with one drawer, one/ two shutters and one adjustable
- Storage unit with 4 drawers (only with 450 mm width unit).

**Sink Units** – The sink unit should consist of a base cabinet, S.S. & a faucet. The raw material used for a base cabinet should be 0.8 mm thick CRCA M.S. Sheet. The complete M.S. material of cabinet should be pre-treated (degreased, Zinc Phosphated) and epoxy powder coated (Ivory colour) for better corrosion resistance. The thickness of powder coat should be 45-50 microns, which passes the test of Salt Spray for 1000 Hours and having scratch hardness of 3 kg. Sinks should be Polypropylene Molded Sinks - Made up of 5 mm thick high density and elastic poly propylene with good resistance to organic solvents. Standard bowl size (L x W x D) is 500 x 400 x 300 mm. Sink unit should also have 3-way (2 Straight + 1 Swan Neck) water faucet made up of Brass and with Epoxy powder coatings.

**Reagent Shelves** – Reagent Shelves to be of complete modular design consisting of horizontal 2 stage storage shelves. The end vertical support should be 0.9 mm & horizontal shelves of 0.8 mm thick CRCA M.S. Sheet surface to be PP Laminated 1 mm thick of approved shade. Each shelf should have a load carrying capacity of 30 kgs. of UDL for the length of 1000 mm. Each vertical panel shall be assembled with horizontal shelf with M6 fasteners having Zinc-Cobalt coating for better corrosion resistance. The complete M.S. material of cabinet to be pre-treated (degreased, Zinc phosphated) and epoxy powder coated for better

corrosion resistance. The thickness of powder coat to be 45-50 microns, which passes the test of Salt Spray for 1000 hours and having the Scratch Hardness of 3Kgs.

**Switches and Sockets** – It should be made of High gloss virgin grade engineering thermoplastics to impart a defect free surface. It should also impart excellent electrical insulation properties i.e. should not melt on heating or catches fire. Owing to this all electrical switches and sockets should be capable of handling higher currents and operating temperatures. Front plates should be able to be changed at any time with ease without disturbing the wiring to quickly and economically match changes in the surroundings.

### **Worktop**

- **Granite** – It shall be 18mm thick jet black granite with edges having round profiles of 5 mm radius on top side. The overhang should be 25 mm at the front side. The backing material used for granite should be a neoprene mat of 6 mm thickness.
- **Gas Valves** All gas valves for regular lab gases should be made of powder-coated brass and should have standard needle valve and push and turn type arrangement for all burning gases to be supplied. All supplied valves to clear the following pressure test conditions: Gas Fittings – 7 bar.

**Note: Bidders are advised to visit the site to familiarize themselves with the site conditions.**



(photograph: indicative only)

Make: Godrej or equivalent

# Argon Gas Cylinder with regulator

## Annexure - III

### Specifications

#### (i) Cylinder:

- Steel Cylinders for Gases of Medium Volume with concave bottom and with rotund bottom and supporting ring
- 50 Liters Water Capacity
- Working Pressure (MPa/bar): 15/150
- Cylinders are equipped with valve, ring of neck and protective cap, supporting ring (for cylinders with rotund bottom).
- Diameter of cylindrical part, 219 mm
- Length of body: 740 - 1755 mm  
Mass: 32,3 - 93 kg

Each cylinder marked with the following information:

- 1) Trade mark of a manufacturer,
- 2) Number of a cylinder,
- 3) Date (month, year) manufacture
- 4) Year of following examination
- 5) Working and testing pressure in at., 1 at = 0,980665 bar.
- 6) Volume (Liter) of a cylinder,
- 7) Mass (Kilogram) of a cylinder,
- 8) Sign of a quality inspection of a manufacturer

Make of carbon steel

C carbon	Si silicon	Mn manganese	Cr chrome	Ni nickel	S sulfur	P phosphor
carbon steel	0,42-0,45	0,17-0,37	0,50-0,80	0,25	-	-

#### (ii) Specification for Argon

- Pre-purified Grade
- 99.998% minimum purity
- 1800 psi supplied pressure from the tank

- Tank pressure recommended to be at least 2640 psi

**(iii) Gas Regulator (Two Stage)**

- Designed for heavy duty gas application in laboratory
- Two Stage Regulator
- Gas Service : Nitrogen and Argon
- Delivery Pr. Ranges : 0.5kg/cm<sup>2</sup>g – 5.5 kg/cm<sup>2</sup>g
- Max Flow : 80LPM
- Seat : TEFZEL
- Internal Seals : Teflon
- Maximum Inlet Pressure : 3000 psi
- Maximum deliveryPressure : 10-250 psi
- Filter : 10 micron sintered bronze / cupro-nickle
- Temperature Range : -40°F to 140 °F
- Inlet Gauges : 2-1/2", 4000 PSI
- Outlet Gauges : 2-1/2", 400PSI
- Ports : ¼" NPT(F) x 6 nos
- Weight : 1.8 kg
- Delrin cap bushing for smooth adjustments
- Self re-seating external safety pressure relief valve
- Sintered bronze inlet filter
- Stem type seat assembly for more reliable seating
- 2-1/2" gauges for easy reading
- 2" and 3-1/4" Diaphragms
- Weight: 7 lbs 6 oz
- Conforms to CGA E-4 Standard for Gas Pressure Regulators
- Body and housing cap are machined from class "A" brass bar stock

# Nitrogen Gas Cylinder with regulator

## Annexure - IV

(i) **Cylinder:**

- Steel Cylinders for Gases of Medium Volume with concave bottom and with rotund bottom and supporting ring
- 50 Liters Water Capacity
- Working Pressure (MPa/bar): 15/150
- Cylinders are equipped with valve, ring of neck and protective cap, supporting ring (for cylinders with rotund bottom).
- Diameter of cylindrical part, 219 mm
- Length of body: 740 - 1755 mm  
Mass: 32,3 - 93 kg

Each cylinder marked with the following information:

- 1) Trade mark of a manufacturer,
- 2) Number of a cylinder,
- 3) Date (month, year) manufacture
- 4) Year of following examination
- 5) Working and testing pressure in at., 1 at = 0,980665 bar.
- 6) Volume (Liter) of a cylinder,
- 7) Mass (Kilogram) of a cylinder,
- 8) Sign of a quality inspection of a manufacturer

Make of carbon steel

<b>C carbon</b>	<b>Mn manganese</b>	<b>Cr chrome</b>	<b>Ni nickel</b>	<b>S sulfur</b>	<b>P phosphorus</b>
carbon steel	0,17-0,37	0,50-0,80	0,25	-	-

(ii) **Specification for Nitrogen**

- Pre-purified Grade
- 99.998% minimum purity

- 1800 psi supplied pressure from the tank
- Tank pressure recommended to be at least 2640 psi

### (iii) Gas Regulator (Two Stage)

- Designed for heavy duty gas application in laboratory
- Two Stage Regulator
- Gas Service : Nitrogen and Argon
- Delivery Pr. Ranges : 0.5kg/cm<sup>2</sup>g – 5.5 kg/cm<sup>2</sup>g
- Max Flow : 80LPM
- Seat : TEFZEL
- Internal Seals : Teflon
- Maximum Inlet Pressure : 3000 psi
- Maximum deliveryPressure : 10-250 psi
- Filter : 10 micron sintered bronze / cupro-nickle
- Temperature Range : -40°F to 140 °F
- Inlet Gauges : 2-1/2", 4000 PSI
- Outlet Gauges : 2-1/2", 400PSI
- Ports : 1/4" NPT(F) x 6 nos
- Weight : 1.8 kg
- Delrin cap bushing for smooth adjustments
- Self re-seating external safety pressure relief valve
- Sintered bronze inlet filter
- Stem type seat assembly for more reliable seating
- 2-1/2" gauges for easy reading
- 2" and 3-1/4" Diaphragms

- Weight: 7 lbs 6 oz
- Conforms to CGA E-4 Standard for Gas Pressure Regulators
- Body and housing cap are machined from class "A" brass bar stock

## **Gas Cylinder Brackets**

### **Annexure - V**

- All steel construction wall mounted brackets
- Holds one cylinder from 4.0 to 12.0 inch diameter
- All steel, finishing, packaging
- Edges are protected with steel reinforced vinyl edge guarding to help maintain your cylinders and provide extra grip
- Steel parts are sealed with powder paint to assure long service life and chemical resistance
- Support straps are 1.5 inch wide by 54 inch long polypropylene with steel cinch buckle and rate a robust 1138 PSI and are the primary means of support as they enable the cylinders to be held tight and secure against the brackets
- Chain set is included and is used as a secondary means of support
- Dimensions: 4.25"L. x 8"W. x 2.25"H.
- Weight: 3 lbs



(photograph: indicative only)

## **Cylinder Trolley**

### **Annexure - VI**

- The trolley should be able to carry 50 L Cylinder
- 150 kg capacity
- Fully welded tubular steel construction



- Steel sheet blade with 3-sided rim and safety chain holds gas cylinders securely
- Takes 1 bottle
- Solid rubber or pneumatic tyred models
- Blue powder coated finish as standard



(photograph: indicative only)

## **Laboratory Stools**

### **Annexure - VII**

Five legged stainless steel stool with back rest, cushion, revolving seat with height adjustment feature



(photograph: indicative only)

## **Chemical Storage Cabinets**

### **Annexure - VIII**

#### **Specifications**

- Product Size: 1000 mm (W) x 486 mm (D) x 1800 mm (H)
- Construction &Material:Rigid construction with matt finish, Material: MS CRCA,
- 1.2mm thick.Cabinet to be sent assembled.

- Shutters: MS-CRCA Powder coated shutter with glass. Shutter has perforations in the lower portion.
- No. of doors: 2
- Locking & handle: 10 Lever Cam Lock, 2 way locking mechanism with shooting bolt arrangement. SS-304 Handle to be provided.
- Trays: Trays shall be able to collect the spillage if any occurs due to bottle breakage. Load Capacity per each full shelf 50 Kg maximum which shall be uniformly distributed. Min. four trays to be provided, 1.2mm thick. The clear distance between the two trays 305 mm. Inside dimensions of the tray: 990 mm (W) x 385 mm (D).

## **Laboratory Refrigerator (2<sup>0</sup>C – 8<sup>0</sup>C)**

### **Annexure - IX**

#### **Specifications:**

<b>Sl No.</b>	<b>Description</b>	<b>Technical details</b>
1.	Temperature Range	2 deg C to 8 deg C
2.	Chamber Volume Capacity	500 litre
3.	Inner Cabinet make	Stainless Steel SS-304
4.	Outer Cabinet make	Powder coated sheet metal
5.	Refrigerant Used	R 134 a
6.	Ventilation Cooling system	No frost ventilation cooling system and fan assisted cooling system. Front-to-rear hot air anti-condensation
7.	Automatic defrost	Automatic defrost with self-evaporating drip tray
8.	Temperature Controller	Digital temperature controller
9.	Front door type	Double glazed safety glass doors with self closing hinges
10.	Light illumination	Full length light illumination
11.	Refrigeration technology	Low noise, energy saving and green technology
12.	Compressor type	Branded compressor and main parts
13.	Front door lock	Front door lock as standard
14.	Voltage stabilizer	Automatic built-in voltage stabilizer with time delay restart
15.	Internal shelves	Heavy duty adjustable shelves
16.	Castor wheels	Fitted with front two castor wheels with brakes for easy maneuverability and shifting.
17.	Optional stainless steel trays/ plastic coated rod trays	Quote for optional stainless steel trays and epoxy plastic coated steel rods trays for storage of materials
18.	Warranty period	Minimum TWO years warranty period
19.	Operator and Service manual	Operator and service manual essential requirement
20.	Quality Certification	Only international quality CE certified product

# Weighing Balance

## Annexure - X

- The unit should have an easy to read Large Backlight LCD Display with A.E.P(Advanced Eye Protection)
- High Grade Chemical resistance Aluminum Di-cust Housing
- Standard RS 232 C Interface connection to PC, Printer
- Hanger for below balance weighing facility, Monotech weighing cells for constant accuracy
- Fully automatic time & temperature Controlled Internal adjustment, Overload protected
- Fully Automatic Internal calibration with built in weight for CX Series
- Automatic External calibration facility should also be available
- Various weighing units like gm, mg, ct, oz, dwt, mom, GN
- User selectable stability and filter level. Programmable smart keys for proffered applications
- The unit should conform to ISO 9001-2008 standard.

**Capacity: 220 gm**  
**Readability: 0.1mg/0.0001g**  
**Repeatability: ( + / - ) 0.1mg/0.0001g**  
**Linearity: ( + / - ) 0.2mg/0.0002g**  
**Pan size: 90 mm**  
**Response Time(stabilization time): 2-4 Second**  
**Display: Back-lit LCD Display**  
**Calibration: Internal Calibration Built-in**  
**Unit of Measure: G.mg,GN, mo,oz,dwt**  
**Tare Range: Full (100%)**  
**Operating Temperature: 5 to 40 deg C**  
**Power Supply: AC Adapter 230V/115V, 50/60 Hz**

# Distillation Units

## Annexure - XI

All Quartz, double distillation set-up for dispensing ultrapure water, with built-in-heater, Other parameters are as given below:

Dist. Water Output Cap.(Approx)	4 lt/hr or more
Electrical requirements	230-250 Volts Single phase, 3.5 x 2 kw Quartz heater
Cooling Water consumption	150 lt/hr (approx..)

Biological Activity	Pyrogen Free
pH	6.9-7
Conductivity S/cm	$<1 \times 10^{-6}$
Distillate Temp	65-75 <sup>0</sup> C

## **Digital Polarimeter**

### **Annexure - XII**

1. **Principal :** Computer controlled automatic digital polarimeter for measurement of optical rotation, specific rotation at variable wavelengths
2. **Light Source :** Tungsten Halogen Lamp or equivalent
3. **Measurement wavelength:** 589 nm,  
In addition, there should be an option to choose other wavelengths in the range of 365 nm to 600 nm as per the desired application.
4. **Measurement Angular Range:**  $\pm 90$  deg
5. **Measurement Accuracy :**  $\pm 0.002$ deg ( up to 1deg );  $\pm 0.2$ deg (larger than 1deg)
6. **Resolution :** 0.001deg
7. **Detector :** Photomultiplier tube
8. **Readout modes :** Optical rotation, optical specific rotation, Concentration sugar scale (Z), optical purity
9. **Temperature Control Range :** 0-40 deg C
10. **Power requirement :** AC 240V, 50 Hz
11. **Sample Compartment:**
  - (i) **V-Shape Cell Holder**
  - (ii) **Cylindrical quartz cell**
12. **Equipment specific software should include the following :**

Measurement modes : Polarimeter measurement Optical rotation,  
Readout modes : optical Specification rotation,  
concentration sugar scale Z, optical purity  
Statistical calculation : Average value, standard deviation, coefficient of variation  
Readout modes : Optical rotation, optical specific Rotation  
Data processing : Reaction rate calculation
13. **Interface:** USB or RS232

**14. Accessories:** Computer, Printer & UPS

**15,** Computer (2GB or higher RAM, Intel Core-i3 processor, 500 GB HDD, pre-installed Microsoft Windows, CD/DVD ROM, monitor, keyboard and mouse with instrument controller) and Laser Printer (Black and white), UPS should be supplied with warranty.

## **UV-Vis Absorption Spectrophotometer**

### **Annexure - XIII**

Computer controlled double beam, compact UV VIS absorption Spectrophotometer, operated through Window 10.. The instrument should have facility for automatic accessory recognition. The instrument must be with single push button start facility and spectrophotometer must have high data collection facility .

UV-Vis Absorption spectrophotometer Specifications:

Wavelength Range:	190 - 1100 nm or higher
Optics:	Double beam type, Czerny-Turner mount,
Spectral Bandwidth:	1 nm in UV-VIS range
Scan Speed:	2000-4000 nm/min or higher
Scan Mode:	Continuous Scan and Step Scan
Light Source:	D2 and Halogen Lamp
RMS Noise :	0.00003 Abs
Detector:	PMT
Sampling System:	Standard Liquid Cell
Instrument Control:	By computer through USB port
Software:	<ul style="list-style-type: none"><li>• Spectrum Measurement</li><li>• Spectral Analysis</li><li>• Multiple Instrument Control</li><li>• System Validation</li><li>• Self Diagnostic Routines</li><li>• Publication quality presentations</li><li>• Automated macros command option</li><li>• PLS and CLS quantitative analysis</li></ul>

#### **Software Specification**

Operating System : Windows 10

Data Acquisition Modes : Spectrum, Kinetics and Photometric , Band Gap analysis software with detail facility

Spectrum Mode:

Comparison of multiple spectra/relative processing\*2 Save all processed data with original data set including a history of all manipulations. Spectrum enlargement /shrinking, auto scale and Undo/Redo of these operations Annotation on spectrum screen Normalization, Point Pick, peak/valley detector, area calculation

Transformations 1\* - 4\* derivatives, smoothing reciprocal, square root, natural log, logarithm power, Abs to %T conversion, and exponential,

Photometric ( Quantitation ) mode :

Single wavelength, multi wavelength includes 1, 2 or 3 wavelengths), Spectrum quantitation ( peak, maximum, minimum, area, etc. for Specified wavelength ranges ) Multi-point, single point, K-Factor calibration curves ( 1st, 2nd, 3rd order Function fits, pass-through-zero specification ) Photometric processing with user-defined functions ( +, -, x, ÷, Log, Exp, Etc. functions, including factors)

**Accessories to be offered separately:**

1. Constant Temperature Cell holder with Stirrer
2. Quartz cuvette, 10 mm, 3.5 ml- 2 Pair
3. Glass Cuvette, 10mm, 3.5 ml- 2 Pair
4. UPS (1 kVA), Printer and a Computer (Desktop, 500 GB HDD, 4 GB RAM)

Price has to be including clearing at Kolkata custom and transport it to Gaya campus. Necessary documents will be provided by the University authority.

**20 kVA UPS online one hour power back-up**

**Annexure - XIV**

AC input		
PARAMETERS		
	AC Input Voltage	220V-230 V -20%-15% Single Phase
	Frequency	a-50Hz ± 10 % Can also Work on Good Quality Generators. a-Out Voltage 220/230 V AC Single Phase b-Voltage Regulation ± 1% c-Frequency 50Hz ±0.05 Hz ( Crystal Controlled ) d-Waveform Sine wave e-Harmonic Distortion Less than 3 %
Account Parameters		f-Efficiency > 92 % for 180 V DC > 85 % for 48 V DC/72V DC 87 %
		g- Power Factor 0.8 Lagging
		h-Overload 110% for 10 minute. 200 % for 5 Cycles.
		i- Crest Factor >4:1 jj-Transient Recovery Within 3 Cycles
Protections		An Electronics Circuit with Digital Logics Continuously Searches for the following Faults &Trips the system with Audio – visual Indication a- Battery over Voltage b-Battery Under Voltage c- Output AC Over Voltage b-Output Overload /short Circuit
Indications		<ul style="list-style-type: none"> <li>• Main On</li> <li>• Load On Battery</li> <li>• Battery Low</li> <li>• Inverter Over load</li> <li>• Load On Main</li> <li>• Battery Boost</li> <li>• Battery Level Graph</li> <li>• Load Level Graph</li> </ul>

Metering		Digital metering available for Output Voltage / Battery Voltage /Output Current /Output Frequency ( Customised metering Option Available )
Ambient Conditions		a-Operating -0°C-50 °C b-Storage -0°C-60°C c-Relative Humidity -95% RH d-Operating Altitude up to 2000 meters e-Audible Noise Less than 55 db at 1 meter up to 20 KVA Less than 60 db at 1 meter above 20 KVA
Static Bypass Switch	Remote On/Off Panel	• Remote Indicator Panel
SNMP Interface	Hot Standby Mode	• Parallel Redundant Mode

## **Melting Point Apparatus**

### **Annexure - XV**

Melting-point measuring Range	Ambient temperature to 300°C
Display	Big LCD
Linear Heating up rate	0.2, 0.5, 1.0, 1.5, 2 , 3, 4, 5°C / min.
Temperature Readability	0.1°C
Temperature Accuracy Upto 200°C	±0.5°C
Temperature Accuracy 200 to 300°C	±0.8°C
Dimension (mm)	510 x 380 x 360
Power Supply	220V /50Hz

## **Ultrasonic Cleaner**

### **Annexure - XVI**

Ultrasonic bath is needed for making fine colloidal dispersions and for cleaning purposes. It should have following specifications:

- Capacity : 2.8 litres or higher
- Stainless-steel cover

- Corrosion-resistant, Type 304 stainless steel tank with rolled edges to minimize leaks
- Frequency output): 40 kHz
- Power (VAC): 220 V, 50 Hz
- Perforated tray for keeping test-tubes, beakers in the tank
- Built-in, 60-minute countdown timer
- Heater and thermostat that maintains temperature from ambient to 60°C

## **Hot Air Oven**

### **Annexure - XVII**

Temperature Range	Ambient + 10 to 250 °C
Temperature Resolution	0.1°C
Temperature Uniformity	+1.0°C
Chamber Dimension	550 x 450 x 550
Heating Power	2KW
Load per rack	15 kg per rack
Power supply	220V / 50Hz

## **Vacuum Oven**

### **Annexure - XVIII**

- Vacuum Oven should be Double walled
- Inside chamber should be constructed with thick stainless steel 304 Quality
- Outside chamber manufactured with mild steel sheet per greased, pretreated and powder coated for rust proofing
- High Grade glass wool insulation between the chambers to prevent heat loss. Uniform drying through vacuum
- Operating temperature range should be from 50°C to 200°C with 2°C accuracy
- Precise Vacuum control upto 30 mm Hg, which are displayed on Analog/Digital gauge
- The vacuum chamber should be fitted with set of high quality heaters for quick and uniform heating
- Digital temp indicator and controller
- The Door should have a thick tempered toughened glass window and should be properly sealed with silicon rubber gasket for observation without disturbing thermal condition
- Control panel on the front panel, with temperature controller, switches and indicating lamps
- Working chamber should be around 30 x 22 cm
- Power supply: 230 V AC,50 Hz
- Vacuum control and relief valves should be located in front of unit for convenient monitoring



**Bench-top pH Meter-cum potentiometer**  
**Annexure - XIX**

Meter style	Bench top
Range (pH)	0.00 to 14.00
Range (mV)	± 2000
Range (Temperature °C)	<i>10 to 110</i>
Range (Temperature °F)	32 to 230
Resolution (pH)	0.1/0.01
Resolution (Temperature)	0.1
Resolution (mV)	0.1/1
Accuracy (pH)	±0.01 pH
Accuracy (Temperature)	±0.5°C
Accuracy (mV)	±0.2 mV or 0.05%, whichever is greater
Temperature compensation	Automatic or manual
Display	LCD
Calibration	3 points (pH 4, pH 7 and pH 10)
Connections	BNC, Temp 2.5mm
Buffer recognition	USA, NIST
Power	100 to 240 VAC, 50/60 Hz
Datalogging (points)	100
CE Compliance	Yes

**Oil-Free Diaphragm Pump**  
**Annexure - XX**

1. Ultimate Vacuum: 1.5 Torr, (2 mbar)
2. Free Air Capacity: 25 lpm, (0.88cfm)

3. Two stage chemical resistance
4. Non sparking motor
5. Internal parts of the pump should not be made of Glass. Instead it should be made of PTFE or PTFE-like chemical resistant material
6. Motor rotation: 1450 rpm or better

## **Ice Flakes Maker**

### **Annexure - XXI**

- Fully Automatic microprocessor controlled unit
- Water Supply : ¼ inch BSP
- Stainless Steel construction
- Continuous Ice Flakes Output
- CFC free compressor, Noiseless operation, Overload protection
- Low water level detection
- Wheels for easy mobility
- Capacity of Ice flake (kg per 24 hrs.) 50 kg
- Storage Bin: ABS Plastic
- Storage capacity: 15 kg
- Cooling method: air

## **Benchtop Conductivity Meter**

### **Annexure - XXII**

- Display: LCD
- The conductivity meter should be able to measure the conductivity of aqueous and non-aqueous solutions.
- The meter should have the function for automatic temperature compensation.
- The meter should be capable of calibrating up to 5 points using standard solutions
- The system should include Conductivity cell, Temperature Probe, Electrode Holder Arm
- One spare conductivity cell should also be provided.
- Conductivity Range: 0.0- 200.0 mS
- Conductivity Accuracy:  $\pm 1\%$  F.S
- Temperature Range: 0 to 100°C
- Temperature Accuracy:  $\pm 1^\circ\text{C}$
- Temperature Coefficient: 0 to 3.9% per °C
- Calibration Points: 1 point per range
- Calibration Solution: 10 to 17  $\mu\text{S}$ , 100 to 170  $\mu\text{S}$ , 1000 to 1700  $\mu\text{S}$ , 10 to 17 mS
- Cell Constant: 0.1, 1.0, 10 adjustable
- Temperature Compensation: 0 to 50°C, Manual or Automatic
- Power Supply: DC 9V, using AC Adapter 220VAC, 50Hz

## **Benchtop Centrifuge**

### **Annexure - XXIII**

• The unit should be versatile with wide choice of rotor heads & adapters. Angled Rotor Heads compatible with polypropylene tubes of different capacities, 15 ml and 50 ml, should be provided with the unit. The unit should give stable speed output even under unstable voltage conditions

A bench-top centrifuge is needed in which time and speed can be pre-set with high degree of accuracy and precision. It should satisfy the following specifications:

- Speed : 5000 RPM
- RCF: 4000 g or above
- Step-less speed regulator
- Stainless Steel Chamber Calibration Points
- Brushless Induction motor
- LCD for display of speed and time
- 0-60 minutes digital countdown timer
- Dynamic brake for quick deceleration
- Imbalance detection with auto shutdown
- Safety Lid interlocks for safety during centrifugation
- 15 ml tube- angled rotor, and 50 ml tube angled rotor

## **Heating Mantle**

### **Annexure - XXIV**

Thermal Insulation: Ceramic Fibre

Energy controller: Built-in Simmer stat

Maximum temperature: Up to 450°C

Case construction: Yes

Safety cut-off: 3 Core, 2 Meter long

Mains chord: 220 V, 50 Hz

A total of to units are required, five with a heating capacity of 250 ml and five with a heating capacity of 100 ml round bottom flasks.

## **Water Bath**

### **Annexure - XXV**

Temperature up to 65°C,  $\pm 1.0^\circ\text{C}$ , is controlled by Digital temperature controller cum indicator supplied with Pyramidal lid and cord, but without racks.

Inner Chamber: 600 x 300 x 175

Double walled, outer Mild Steel Sheet, Epoxy

Coated, Inner Chamber of Stainless Steel with immersion heater, indicators,

# **Rotary Evaporator**

## **Annexure - XXVI**

### **Specifications:**

#### **1. Rotary evaporator:**

- \_ Operating voltage : 220 - 240 V
- \_ Frequency : 50/60 Hz
- \_ IP class : 20 or 21
- \_ Rotation speed : (range) 20 - 280 rpm or more
- \_ Flask size : 1000 - 4000 ml or more
- \_ Max. Flask weight : 2.5 - 3.0 kg

#### **2. Heating Bath:**

Heating bath should be constructed of an insulated double wall for user protection against burns and scalding

- \_ Diameter Heating Bath : Approx. 250 - 300 mm
- \_ Weight : Approx. 3.5 - 4.0 kg
- \_ Operating voltage : 220 - 240 V
- \_ Frequency: 50/60 Hz
- \_ IP class : 20 or 21
- \_ Bath size : 3.5 – 4.5 liter
- \_ Temperature range : At least 20 – 100°C or more
- \_ Regulation accuracy : +/- 1°C or better
- \_ Display : LED/LCD

#### **3. Vacuum Pump**

- \_ Vacuum Pump (diaphragm/ rotary) : 2 Stages
- \_ Volume flow rate : 1.7 -1.8 m<sup>3</sup>/h or better.
- \_ Ultimate vacuum : 7-9 mbar or better
- \_ Operating voltage : 220 - 240 V/ 50-60Hz

#### **5. Low Temperature Circulator and cold trap**

Temperature range/accuracy: -20 ~ +30°C, ±1°C to ±2.0°C  
-20 ~ +20°C, ±2°C

\* Cooling capacity: 450W at 10°C, 850W at 10°C

\* External circulation(50/60Hz): Max. flow rate 9/10L/min  
14/16L/min

\* Max. pump head pressure(50/60Hz): 4.2/5.6m, 9.5/13m

5. The quoted system should be certified as complete for efficient removal of organic solvents and water at a temperature below their boiling point.
- 6.. Additional accessories may also be quoted.
7. Three year on-site extended warranty on all parts.
8. Annual Maintenance Contract may be quoted as optional

## **Muffle Furnace (Rectangular)**

### **Annexure - XXVII**

#### **Specifications:**

Maximum Temperature: 1000°C

Operating temperature: 900 °C

Size of the Heating Chamber: 5'' × 5'' × 10'' (approximate)

Controller: Programmable PID controller to program digitally  
Rate of Heating: 2-10 °C/ minute  
Temperature Accuracy:  $\pm 1$  °C  
Input Power: 50Hz/220 V, Single phase  
Double walled inner and outer body should be made of proper Sheet.  
Heating element : Kanthal A".  
Appropriate ceramic insulation to avoid thermal loss.

## **Digital Furnace (upto 500 °C)**

### **Annexure - XXVIII**

#### **Specifications:**

Maximum Temperature: 600°C  
Operating temperature: 500 °C  
Size of the Heating Chamber: 5" × 5" × 10" (approximate)  
Controller: Programmable PID controller to program digitally  
Rate of Heating: 2-10 °C/ minute  
Temperature Accuracy:  $\pm 1$  °C  
Input Power: 50Hz/220 V, Single phase  
Double walled inner and outer body should be made of proper Sheet.  
Heating element : Kanthal A".  
Appropriate ceramic insulation to avoid thermal loss.

## **Magnetic Stirrer with Ceramic Hot Plate**

### **Annexure - XXIX**

1. Ceramic Top, 100-1500 rpm
2. Stirring quantity of minimum (H<sub>2</sub>O) of 10 L
3. Motor rating input/output = around 14/1.8W
4. Speed range [rpm] in between = 100 – 1500
5. Heating temperature range [°C] in between = 50 – 500
6. Heat control accuracy have around  $[\pm K] 10$
7. Digital Speed controller
8. Set-up plate material ceramic
9. Dimensions of magnetic stirrer = around 150 x 150 mm
10. Display: Digital (LCD or LED)