

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, ODISHA



P.O: Engineering College Burla (Siddhi Vihar), Dist: Sambalpur
Odisha– 768018, India

Website : www.vssut.ac.in, E-mail: registrar@vssut.ac.in, Ph:(0663)2430573,Fax-2430592

No. VSSUT/ CHEM./ 420/2017

Date: 21/09/2017

TENDER CALL NOTICE

Sealed Tenders are invited from the intending reputed Original Equipment Manufacturers/Direct Importers/Registered Authorized Dealers with GST Registration certificate, copy of PAN card for supply of Equipments and Chemicals for **different laboratories of Chemistry Department of VSSUT, Burla**. This would reach the office of the undersigned through speed or registered post by 21.10.2017. Detailed information and the tender document are available in the University website www.vssut.ac.in or contact HOD, Department of Chemistry.

REGISTRAR

Memo No. VSSUT/CHEM./ 421/2017

Dated 21/09/2017

Copy to:

- 1) M/s Display lines, 219, Saheed Nagar, Bhubaneswar-751007 with a request to publish the above advertisement in one issue of the Odisha daily edition (ALL ODISHA EDITION) of THE SAMAJ and the All India edition of The Indian Express using minimum space at I & PR approved/lowest rates. The bills may be sent to the Comptroller of Finance, VSSUT, Burla-768018 in TRIPLICATE along with copies of the paper in which the publication is made, for necessary payment.
- 2) The University/Department Notice Board for publicity.
- 3) Dean F&P, with a request to hoist the tender call notice in the University web site www.vssut.ac.in for wide publicity.
- 4) S.O. Accounts, for information and necessary action.
- 5) Steno to Registrar for record. This is based on the approval of the Hon'ble Vice Chancellor at Note page N-1 of the File No VSSUT/CHEM/42 of the Department of Chemistry.

REGISTRAR

SECTION I: INVITATION FOR BIDS (IFB)

Sealed Bids (properly stitched separately) in two separate covers (**Technical Bid and Price Bid**) are invited by the “**The Registrar, Veer Surendra Sai University of Technology, Odisha**” from the manufacturers/authorized distributors/ dealers for supply of Instrument, equipment, machineries etc. of reputed make (National/ International) for the Department of Chemistry, VSSUT Burla, Odisha.

The Bidders may download the **Tender Documents** directly from the website available at <http://www.vssut.ac.in> and the Tender cost fee of Rs.500/- (Non-refundable) by way of separate Demand Draft drawn in favour of “**The Registrar, Veer Surendra Sai University of Technology, Burla**” payable at **SBI, Burla** should be enclosed along with the Bid. The Tender cost fee and the EMD amount should be submitted separately in separate demand drafts. In case of any bid clarification, responsibility lies with the bidders to collect the same from the website and the purchaser shall have no responsibility for any delay/ omission on part of the bidder.

TIME SCHEDULE:

- a) Price of bidding document: Rs.500/- (Non-refundable)
- b) Date of commencement of downloading bidding document 23.09.2017 at 11.00 AM
- c) Last date and time for Receipt of bids 21.10.2017 up to 5.00PM
- d) Time and date of opening of Tender & technical bid 27.10.2017 at 11.30 A.M
- (e) Time and date of opening of price bid 31.10.2017 at 11.30 A. M
- f) PLACE OF OPENING OF TENDER AND ADDRESS FOR COMMUNICATION AND

RECEIPT OF BID DOCUMENTS:

THE REGISTRAR

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, ODISHA

At- Burla, Po-Burla Engineering College, Dist-Sambalpur-768018,

Tel. No-0663-2430211 Fax No-0663-2430204

**REGISTRAR
VSSUT Burla**

SECTION-II: GENERAL TERMS AND CONDITIONS

GENERAL TERMS & CONDITIONS OF CONTRACT FOR SUPPLY, INSTALLATION AND DEMONSTRATION OF THE INSTRUMENTS, EQUIPMENT REQUIRED FOR DEPARTMENT OF CHEMISTRY, VSSUT, BURLA, ODISHA.

1. Document Establishing Bidder's Eligibility & Qualification

The Bidders shall furnish as part of the Bid the following Documents establishing Bidder's eligibility and qualification to the Purchaser's satisfaction. Non-compliance of any of these conditions shall disqualify the eligibility.

- 1.1 Manufacturer / Authorized Distributor / Dealer having valid license / certificates for the quoted item and the direct Importers holding valid Import License Manufacturer / Authorized Distributor / Dealer of the product are eligible to participate in the Bid.
- 1.2 The Bidder whether manufacturer/ distributor/ dealer must have experience of supply and installation of the quoted items in **different IITs/ NITs/ Institutes of national repute** during last preceding 3(Three) years reckoned from the date of bid opening and the details must be submitted along with documentary proof.
- 1.3 The Bidders shall have to produce document in support of their service associates **nearest to Bhubaneswar/ Sambalpur**, Odisha.
- 1.4 Bidder shall have to provide operational Training for **Machineries** to one Official of each consignee at Suppliers Plant or Consignee site **at least for 7 days whichever is suitable to Purchaser**.
- 1.5 The Bidder shall quote item of one reputed Brand/model with all accessories in complete to perform functionality of Equipment/Machinery.

2. Document Establishing Goods Eligibility

The instruments and equipment offered against the schedule of requirement of instruments, equipment and Machineries should be in accordance with the stipulated specifications and of one reputed brand/model (**N.B: Variation in specification is allowed up to $\pm 5\%$ in case of Equipment**)

- 2.1 The documentary evidence establishing the brand and the model may be in the form of literature, pamphlets, manuals, drawing, circuit diagram etc.
- 2.2 Detailed description of instruments and equipment with essential technical and performance characteristics may also be furnished.

3. Technical Bid (COVER - A)

The following document should be submitted in cover-A.

- 3.1 Earnest Money Deposit.

- 3.2 Technical details of the equipment as per **Annexure-V.**
- 3.3 Copy of the manufacturing license/ import license/ Authorized Distributor/ Dealer certificates
- 3.4 Copy of the authorization from the Manufacturing Company in case of Authorized Distributor /Dealer.in **Annexure-III** along with Manufacturer Industry Registration and Tax Registration Certificate.
- 3.5 VAT/ST clearance certificate up to **date** where applicable.
- 3.6 Copy of the IT PAN Card.
- 3.7 Detail name, address, telephone no. fax, and e-mail of the firm and of the Director / Managing Director / Proprietor of the firm (As per **Annexure IV**)
- 3.8 Address, Telephone No., e-mail, Fax of the Branch Office/ Contact Person/ Liaisoning Office in Odisha.
- 3.9 Power of Attorney/ Authorization to a person for liaisoning and monitoring the business on behalf of the manufacturer / bidder but not entitled to raise the bills.
- 3.10 **The original bid document signed & sealed by authorized person in each page as a token of acceptance of all terms and conditions of the tender with original receipt.**
- 3.11 Any deviation in the specification of the item including standard accessories / optional accessories in complete for functionality of Machine should be marked in **bold letters.(N.B: Variation in specification is allowed upto±5% in case of Machineries/Equipments)**
- 4. Price Bid (COVER – B)**
- 4.1 The hard copy of price bid giving the rates for various instruments & equipment and other items should be submitted along with sealed soft copy of **price bid in Excel format through CD/Pen drive** both in separate sealed cover here in after called **Cover B (Price Bid). Price Bid (Cover - B)** of the bidders who qualify in **Technical Bid (Cover – A)** will only be opened and will be communicated through **E-mail/Fax.**
- 4.2 The price of the each item shall be quoted as per the prescribed Price Schedule Format at **Annexure-I (a) and I (b)** along with price break up of custom duty, Excise Duty, CST, Packing, Forwarding and Handling charges, Insurance charges, ET, Freight up to destination including unloading, VAT, commissioning including testing and training with total price per item at **FOR** destination. The bidders are required to submit the individual price of each instrument(s) and equipment(s) as indicated in the schedule of requirements.
- 4.3 The **Cover B** of the technically qualifying bidders shall be only opened at the Office of the **“The Registrar, Veer Surendra Sai University of Technology, Burla”** on the date and time to be communicated to them after technical evaluation of **Cover A by E-mail/Fax..**

5 BID CONDITIONS

5.1 The bidders should verify the sites of existing laboratories of Department of Chemistry, VSSUT, Burla and the proposed lay out Plan indicating the location of each unit for necessary Technical Evaluation. The scope of Supply as mentioned in the schedule of requirements if not sufficient for full function of the Equipment/Machinery should be intimated in writing with the technical bid.

5.2 The quoted rate shall not vary with the quantum of order placed or destination point.

5.3 A copy of the original bid conditions and the schedules should be signed by the bidder at the bottom of each page with the office seal duly affixed and returned along with the bid. Bid schedule should be duly filled in with an **index** and **page number** for the documents, enclosures & EMD etc. **Paging** must be done for all the documents submitted.

5.4 Bids should be type written or Computerized and every correction/ over writing in the bid should invariably be attested with signature of the bidder with date before submission of the bids to the authorities concerned. No revision of price upward or downward will be allowed once the bid is opened. However the purchaser shall have the right for considering the exchange rate of foreign currencies on verification of documents.

5.5 Language of Bid

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

5.6 Bid Price

- The contract shall be for the full quantity as described above. Corrections, if any, shall be made by crossing out, initialling, dating and re-writing.
- All duties, taxes, and other levies payable on the raw materials and components, job contract shall be included in the total price.
- VAT in connection with the sale shall be shown separately.
- The rates quoted by the bidders shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
- The price shall be quoted in Indian Rupees only.

5.7 VAT/ST clearance

Copies of valid VAT clearance Certificates shall be furnished by the Bidders and the originals of the above certificates shall be produced to the purchaser before placement of notification of award if asked for by the Purchaser.

5.8 EMD

All bidders are required to submit EMD **not less than 2 % of the quoted amount** in shape of **Demand draft** drawn in favour of “**The Registrar, Veer Surendra Sai University of Technology, Burla**” payable at **SBI, Burla** only. The EMD shall be in Indian Rupees.

NOTE: Non-submission of EMD or submission of less EMD than the desired one shall result in rejection of Bid. The EMD deposited against other Bids cannot be adjusted or considered for this Bid. No interest is payable on EMD.

5.9 SUBMISSION OF BIDS

Sealing and Marking of Bids

Bid should be submitted in two Bid system containing two parts as detailed below.

Sealed Cover-A: Technical Bid.

Sealed Cover-B: Price Bid (hardcopy & sealed soft copy in CD/pen drive)

Both the sealed envelopes should then be put in one outer cover and each cover should have the following indication:

- i) Reference No of Bid _____
- ii) Bid regarding _____
- iii) Due date & time for submission of the Bid _____
- iv) Due date & time for opening of the Bid _____
- v) Name of the Firm _____

NOTE:

A. Bids submitted without following two Bid system procedures as mentioned above will be summarily rejected.

B. Please Note that **prices should not be indicated in the Technical Bid**. The Prequalification document including EMD as required in the Bid document should invariably be accompanied with the Technical Bid (**Cover A**).

The outer envelope shall indicate the name and address of the bidders to enable the bid to be returned unopened in case it is declared “**late**”. If the cover containing the outer envelope is not sealed and marked as required, **Purchaser** will assume no responsibility for the bid’s misplacement or premature opening.

The above procedure shall be adopted both for the Technical bid and price bid separately. Telex, cable, email or facsimile bids will be rejected.

5.10 Deadline for Submission of Bids

Bids must be received by the **Purchaser** at the address specified not later than the time and date specified in the Invitation of 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.

The **Purchaser** may, at its discretion, extend this deadline for submission of bids by amending the bid document, in which case all previous rights and obligations of the purchasers and bidders will remain same till the extended date.

5.11 Modification and Withdrawal of Bids

No Modification and Withdrawal of Bids is allowed between the interval of time of submission and the last date and time of the bids.

No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the bidders on the bid form.

5.12 BID OPENING

5.13 The **Purchaser** will open all bids, in the presence of bidder's representatives who choose to attend at **11.30 AM on dated 27.10.2017** at the Office of the "**The Registrar, Veer Surendra Sai University of Technology, Burla**".

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

5.15 The bidder's names, and the presence or absence of the requisite EMD and such other details as the **Purchaser**, at its discretion, may consider appropriate will be announced at the opening. No bid shall be rejected at bid opening, except for late bids, which shall be returned unopened to the bidders.

5.16 Acceptance of the Bid

- Bidders submitting bids would be considered who have considered and accepted all terms and conditions. No enquiries, verbal or written, shall be entertained in respect of acceptance or rejection of the bid.
- Genuine equipment and instrument etc. should be supplied. Bidders should indicate the source of supply i.e. name and address of the manufacturers from whom the items are to be sourced.

- Supply of equipment means – Installation and Commissioning (except civil works), Demonstration as well as Training at site. **No separate charges will be paid on this account.**

5.17 Rejection of the Bid

The Bid document shall be out-rightly rejected under following stipulation and no correspondence will be entertained whatsoever.

- If the Bidders has not furnished the required **Tender paper cost** and **EMD** or EMD exemption certificate from competent authority.
- If the Bidders has not submitted the Price as per the prescribed format **Annexure-I(a) and I (b)**
- **Manufacturing Authorization Annexure-III and in case of Authorized Distributor / Dealer/Suppliers have to submit Manufacture authorization along with copy of above documents of Manufacture Industry.**
- If the bid is not supplemented with breakup of standard accessories / Optional accessories & cost of AMC separately for three years after completion of warranty period **(In case of major machinery only).**
- Photo copy of the up-to-date valid manufacturing license/ import license (if it is imported) /dealership certificate/Distributor certificate of the product along with Tax registration Certificate of Manufacturer issued from competent authority.
- If the bidders, whether manufacturer or authorized distributor/ dealer have not supplied the required quantity for qualification as per the eligibility criteria and not submitted the performance statement at **Annexure-IV with supporting documents.**
- If the quoted product of the bidders not confirms to technical specification with complete accessories for functional Equipment/Machinery and standard of workmanship required by the Purchaser.
- If the bidder has not furnished technical details of the equipments and machinery with **one make & model** as per **Annexure-V.**
- **If bidder will quote items of more than one make/model.**
- If the bidder has not furnished detailed mandatory drawings, **catalogue/** Foundation drawings & schedule of supply of items, if required.
- If the bidders have not agreed to give **bid validity.**
- If Bidder is not willing to provide operational Training for Machineries to one Official of each consignee at Suppliers Plant or Consignee site **at least for 7 days in case of major machineries whichever is suitable to Purchaser.**

5.18 Purchaser's Right to accept any Bid and to Reject any Bid

The Purchaser reserves the right to accept or reject any bid and to annul the bidding process and reject all the bids without assigning any reason thereof at any time prior to award of Contract, without thereby incurring any liability to the affected Bidders or Bidders on the grounds of such action of the purchaser. In case no bidder qualifies as per qualifying criteria and standards, purchaser may at his discretion relax qualification criteria for award of contract.

5.19 Evaluation and Comparison of Bids

The comparison shall be of FOR destination price basis including the price of all costs wherever applicable as well as duties and taxes (**but excluding VAT**) paid or payable on Machineries, instruments & equipment incorporated or to be incorporated in the items including the warrantee/guarantee period from the date of installation.

- The Purchaser's evaluation of a bid will take into account, in addition to the bid price and the price of incidental services.
- The purpose of bid evaluation is to determine substantially responsive bid with the lowest evaluated cost, but not necessarily the lowest submitted price, which should be recommended for award.
- Evaluation of bids should be made strictly in terms of the provisions in the bid document to ensure compliance with the commercial and technical aspects.
- The past performance of the suppliers will be taken into account while evaluating the bids.
- Cost of the inland transportation, insurance and other costs within the Purchaser's Country incidental to delivery of the goods to their final destination;
- **Alternative options of offer shall not be allowed.**
- Each Bidder shall submit only one quotation with one make & model.
- The quotation would be evaluated separately for each item
- Sales Tax in connection with sale of goods shall not be taken into account in evaluation.
- Willingness to provide operational Training to one Official of each consignee at consignee site for at least **7 days whichever is suitable to Purchaser.**

6.0 Supply Conditions

6.1 Delivery of Goods

The delivery of goods shall be made by the supplier to the Consignee in accordance to the order placed as shall be detailed in the Schedule of requirements & technical specifications.

6.2 Inspection/ Test/Training

The inspection/examination/ test may be conducted in the premises of the Supplier or at the goods final destination or at the premises of the consignee, as will be decided by the Purchaser.

The purchaser's right to inspect/ examine/test & where necessary to reject the instruments & equipment after the arrival of the goods at the final destination, shall in no way be limited or waived by the reason of the goods having been inspected and tested by the manufacturer previously. In case of rejection of the goods at the final destination after inspection and test as stipulated above and in case any inspected/ tested goods fail to confirm to the specification/ working condition, the purchaser may reject them and the supplier shall replace/ repair the same free of cost.

6.3 Warrantee Period (comprehensive)

The Bidders must quote the period of comprehensive **warranty** from the date of completion of the satisfactory commissioning as per (**Annexure-II**). This also includes all accessories related to instruments & equipment quoted for.

6.4 Up time Warrantee

The Bidders should provide uptime guarantee of 95%.

6.5 Downtime Penalty Clause

During the warranty period, desired uptime of 95% of 365 days (24 hours) if downtime exceeds 5%, penalty in the form of extended warranty, double the number of days or more will be applied for which the equipment goes out of service.

In no case the machineries should remain in non-working condition for more than 30 days beyond which a penalty of 0.2% of machine cost will be charged per day.

6.6 Payment Terms

No advance payment will be made by the Purchaser to the supplier for performance of the contract. 100% of the contract price shall be paid within 30 (thirty) days after satisfactory supply, installation, demonstration, Commissioning & training and stock entry of bills of the goods within due date of delivery.

6.7 Transportation

The Supplier shall be required to meet all transport and storage expenses until commissioning of the instrument(s) / equipment covered in the contract.

6.8 Taxes and Duties

The Supplier shall be entirely responsible for payment of all Taxes, Duties etc. incurred until delivery of the contract goods to the Consignee subject to recovery afterwards in the bill as claimed in the Bid offer.

VAT as applicable is payable, to the suppliers of the State of Odisha if claimed in the Bid offer.

VAT/ CST will be paid to the Suppliers of the outside State other than Odisha, if claimed in the Bid offer. Any revision of VAT/ CST shall automatically be taken into account.

Entry Tax, if paid by the Supplier, at the local (destination head) Corporation/ Municipality/ NAC is allowed once only on production of money receipt for such payment, if claimed in the Bid offer. Any other statutory levy imposed by the Govt. of India/ Govt. of Odisha from time to time will be considered extra on demand with adequate proof thereof. The service tax and the work contract tax shall be levied (Wherever applicable). Income Tax as applicable shall be deducted at source.

6.10 Period of Validity of Bids

- The bid rates should be kept open/ valid for a period of **180** days from the date the Bids are opened.
- A bid valid for a shorter period i.e less than **180** days shall be rejected, as nonresponsive.
- In absence of any indication of the date of validity in the bid, it will be presumed that the offer will remain valid for the minimum period i.e. **180** days as prescribed above.

6.11 Commissioning Period

Maximum commissioning period is **30 days** from the date of supply OR **120 days from the date of issue of Purchase Order** failing which the purchaser will have the right to impose penalty for the delay period @ **0.5% per week of the contract value of item/items excluding taxes from the bill amount subject to maximum of 10%**. However Registrar has right to extend the delivery period/commissioning period in special cases.

6.12 Penalty against Non Supply

In case of non supply of Stores within the due date i.e. within the date of delivery the EMD deposited by the bidder shall be forfeited.

6.13 Jurisdiction of the Court

The Purchaser and the Supplier shall agree that the competent Court at Sambalpur shall have the jurisdiction to try and decide anything between the parties and they may approach the Competent Court at Sambalpur if required at any time.

**REGISTRAR
VSSUT, Burla**

SECTION – III: FORMS AND ANNEXURES

ANNEXURE-I (a)

PRICE SCHEDULE (ITEM WISE) FOR EQUIPMENT

Item Serial No	Item Description	Country of origin with make & model	Quantity & Unit	Price for each unit							Total Price (a+b+c+d+e+f)
				Exware house/ Ex-showroom/ Off-the-shelf (a)	Excise duty/Costume duty, if any (b)	Packing & Forwarding (c)	Inland transportation, insurance and other local costs incidental to delivery (d)	CST/Entry tax, if any (e)	Unit price (a+b+c+d+e)	VAT (f)	

ANNEXURE-I (b)

PRICE SCHEDULE (ITEM WISE) FOR CHEMICALS/GLASSWARES

Item Serial No	Item Description	Quantity & Unit	Price for each unit							Total Price (a+b+c+d+e+f)
			Exware house/ Ex-showroom/ Off-the-shelf (a)	Excise duty/Costume duty, if any (b)	Packing & Forwarding (c)	Inland transportat ion, insurance and other local costs incidental to delivery (d)	CST/ Entry tax, if any (e)	Unit price (a+b+c+d+e)	VAT (f)	

ANNEXURE - II

WARRANTY MAINTENANCE CONTRACT AGREEMENT.

THIS AGREEMENT made the.....day of, 20___ between the “**The Registrar, Veer Surendra Sai University of Technology, Burla**” (hereinafter "the Purchaser") of the one part and M/s..... (here in after called "the Supplier") of the other part:

WHEREAS the Purchaser invited bids for certain Goods & ancillary services viz, supply and commissioning of the instruments & equipment at Bhubaneswar including Comprehensive Warranty Maintenance Services and has accepted a bid by the Supplier for the instruments & equipment specified below at the Consignee site including Comprehensive Warranty maintenance Services for a period of 2 (Two) year from the date of installation & commissioning of the instruments & equipment as per award of Contract No..... dated

Name of the Equipment & machineries Qty

(To be filled in as per details of goods in the award of Contract)

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. Maintenance Services shall consist of Preventive and Corrective maintenance of equipment specified above & will include repair and replacement of parts free of cost.
2. Preventive maintenance, monthly once, which includes:
 - 2.1 Check-up to ensure that device connection is proper, cabling is at proper condition etc.
 - 2.2 Cleaning of the above instruments & equipments and checking the System Performance.
3. The Supplier is to furnish the tentative schedule of the preventive maintenance of Warranty Maintenance Contract (WMC) to be carried out.
- 4 The parts replaced must be new parts or equivalent in performance to new parts.
5. The Supplier will also provide the same maintenance service in case of the movement of equipment from the place of original installation to a different place or location, if the equipment is shifted by the Purchaser to another place or location at the cost and risk of the purchaser.
6. Any complaint informed through telephone must be acknowledged with a Complaint No. by the Supplier which will be noted by Consignee. All further contact with the Supplier on such complaint will be initiated through that Complaint No. Once rectification done, that No. will be cancelled by both parties. A register is to be maintained by the Supplier where complaints are to be noted along with Complaint No.

7. The maintenance shall normally be done at the earliest.
8. The Service Engineer of the Supplier will be allowed to handle the respective plant & machineries only in presence of the officer in charge at the Consignee site.
9. The Supplier should ensure that maintenance job is not hampered/delayed due to paucity of spares/inadequate manpower etc.
10. The Supplier should submit the services call report, to the Consignee for each and every service call without fail.
11. The Supplier evaluation data format for the WMC of Consignee systems may be filled up for necessary action.
12. All formats after filled up should be signed at the end of each page by the Supplier.
13. After completion of the work/repair/maintenance, the Purchaser shall issue a certificate of completion to the supplier to that effect.

Signature

Signature

For the Purchaser

For the Supplier

Name:

Name:

Designation:

Designation:

Address:

Address:

Telephone No:

Telephone No:

ANNEXURE-III

MANUFACTURES' AUTHORISATION FORM

No. _____ / Date _____ /

To

The Registrar,
VSSUT Odisha
Burla, Sambalpur.

Dear Sir, Bid No. _____

We _____ who are established and reputable manufacturers of _____ having factories at _____ (Address of Factory) do hereby authorize M/s. _____ (Name and address of Agent) to submit a bid and sign the contract with you against the above bid.

* No company or firm or individual other than M/s. _____ are authorized to bid and conclude the contract in regard to this business against this specific invitation for bid.

We hereby extend our full guaranty and warranty as per general conditions of contract for the goods and services offered by the above firm against this bid.

Yours faithfully,
(Signature for and on behalf of Manufacturers)

Note: This letter of authority should be on the letterhead of the manufacturer and should be signed by a person, competent and having the power of attorney to bind the manufacturer. It should be included original by the Bidders in its bid.

- This para should be deleted for simple items where manufacturers sell the product through different stockiest.

ANNEXURE-IV

DETAILS OF THE BIDDERS

Bid Reference No.

Name and address of the Bidder:

01 Name of the bidder

- a) Full postal address
- b) Full address of the premises
- c) Telegraphic address
- d) Telephone number
- e) Fax number
- f) E mail:
- g) PAN No
- h) TIN No

02 Total annual turn-over (value in Rupees)

03 Quality control arrangement details

04 Test certificate held

- a) Type test
- b) BIS/ISO certification
- c) Any other

05 Details of staff

- a) Technical
- b) Skilled
- c) Unskilled

06 Branch Office/ Contact Person/ Liaisoning Office in Odisha.

- a) Address
- b) Telephone No.
- c) e-mail,
- d) Fax

Signature and seal of the Bidder

ANNEXURE-V

Technical details of the Equipments to be supplied by the bidder

Bid SI No. of the item	Tender specification	Bidders Specification with make and model no (Enclose manufactures catalogue / brochure for each item)	Deviation if any With university specification

Signature and seal of the Bidder

SECTION-IV: SCHEDULE OF REQUIREMENTS AND TECHNICAL SPECIFICATIONS

List of Equipment

Sl. No.	Name of instruments/Equipments	Specification
01	Atomic Absorption Spectrophotometer	<p>PC control automatic, 4-lamp turret, air-C₂H₂ flame, D₂ background correction. With Air Compressor Lamp; Hollow Cathode Lamp (Cr, Cu, Fe, Mn, Ni, Ag, Cd, Pb, Zn, Ca, Mg, As, Hg, Se, Co, Mo, Ba, Sn, Li),</p> <p>SPECIFICATIONS: Wavelength Range: 190-900 nm/ 180 – 1000nm, Wavelength Accuracy: ±0.15 nm, Grating: 1800 Line/mm, Detector: Photomultiplier (wide range), Optics: true double beam, sealed and vibration free optical system with a reflective optical compartment. Resolution 0.2nm ± 0.02 nm, Background correction deuterium arc/self reversal upto 2.5 absorbance, high efficiency Nebuliser, Titanium burner head.</p> <p>MANDATORY ACCESSORIES: Argon Gas Cylinder, C₂H₂ Gas Cylinder (AAS Grade Gas) Fume Hood with Blower, Desktop PC; Laser jet color printer or B/W, 5 KVA Servo Stabilizer, 2 Ton AC with 500 kva stabilizer, Vapor/Hydrate Generator for As, Se, Hg, Pb, Standards for each element, Sodium Borohydrate, Potassium Borohydrate, AAS grade Water (15 Liters), Glasswares for AAS operation, Oil free air compressor should proceed by manufacturing directly, 10kva ups with 60 min backup, Suitable wooden table to place the instrument with accessories should be supplied.</p> <p>Price shall be inclusive of packing, forwarding, freight, delivery at door, installation and demonstration with warranty inclusive of all duties and taxes</p>
02	Rotational viscometer	<p>AUTO-TEST: Automatic internal Viscometer Checking, Precision: ± 1% of Full Scale, Resolution: With low viscosity adaptor: 0.01 For Lower than 10,000 Viscosity cP: 0.1 For Viscosity equal to or above 10,000 cP: 1 2, Repairability: 0.2%, Supplied at 100-240 VAC, 50 / 60 Hz</p> <p>Price shall be inclusive of packing, forwarding, freight, delivery at door, installation and demonstration with warranty inclusive</p>

		of all duties and taxes
03	Tensiometer	<p>Maximum load 210g, Resolution 10Microg,precision 30microg, mesurment rate 50Hz, adjustment fully automated, sample: travel distance >110mm, resolution 0.1microm, travel speed 0.09 to 500mm/min, type of motor brushless DC servo motor, thermostatted jacket 70 mm (100ml), Inverse CMC cone shaped vessel, integrated sample stage, temperature: -10 to 130 °C software : SFT/ IFT, contact angle, CMC, Liquid density, PC (Desktop)</p> <p>Price shall be inclusive of packing, forwarding, freight, delivery at door, installation and demonstration with warranty inclusive of all duties and taxes</p>
04	Thermostatted refrigerated/heating water circulator	<p>Working temperature range -20 to +150⁰C, Temperature control:PID, Temperature display: LED, Temperature stability ±0.03, Display resolution 0.1 °C, Pump capacity flow rate 15 L/min, Bath depth (cm) 13x15x15, Dimension (cm) 23 x 39 x 65</p> <p>Price shall be inclusive of packing, forwarding, freight, delivery at door, installation and demonstration with warranty inclusive of all duties and taxes</p>
05	Autogas monitoring kit	<p>The Impact range of portable multigas detectors monitors and displays as to four gases with ultra-bright alarm lights and powerful audible alarm, sensor based (SO_x/NO_x/CO/CO₂)</p> <p>Extra sensor for NH₃/benzene/CH₄</p> <p>Price shall be inclusive of packing, forwarding, freight, delivery at door, installation and demonstration with warranty inclusive of all duties and taxes</p>
06	Respirable dust sampler 10 pm	<p>Flow Rate : 1 m³/hr maintained by microprocessor based electronic controller. Elapsed time indicator: Real Time clock based, records the operating time for each sample in hours and minutes. Volumetric Flow rate Compensation: Performed automatically by the system using Sensors for Ambient Temperature, Barometric Pressure and Filter Pressure. Volume Totalizer: MCU unit totalizes and displays volume of air sampled. Flow Recorder: USB flash memory based system records flow rate, volume of air sampled, air temperature, filter temperature, filter pressure and barometric pressure. Size selective inlets: PM10 Impactor and WINS Impactor for PM2.5 conform to USEPA design. Special Feature: Auto shut-off of sampler</p>

		<p>if flow rate drops by more than 10% from designed value of 16.7 LPM. Same inst. can be used as a PM10 Sampler by removing the WINS impactor. Vacuum Pump: Oil Free, pump driven by induction motor for stable flow rate. PC based Software: Windows XP compatible software provided to process recorded data. Calibration Unit: Leak Check & Flow rate Calibrations system provided.</p> <ol style="list-style-type: none"> 1. Provision to attach gaseous sampler 2. 100 sheet filter paper to monitor pm10 3. Chemical kit for analysis of gaseous sampler <p>Price shall be inclusive of packing, forwarding, freight, delivery at door, installation and demonstration with warranty inclusive of all duties and taxes</p>
07	Respirable dust sampler 2.5 pm	<p>Flow Rate : 1 m³/hr controlled by Critical Orifice and displayed on a rotameter requires no maintenance. Size selective inlets: PM10 Impactor and WINS Impactor for PM2.5 conforms to USEPA design. Vacuum Pump: Oil Free, light weight pump driven by brushless induction motor. Time Totalizer: Records the actual time duration of each sample. Provision to attach Gaseous Sampler: The APM 550MINI has an in-built valve and piping for use of a gaseous sampling attachment for monitoring SO₂, NO_x, NH₃, Ozone etc. Compact & Light: Single unit compact cabinet made of Aluminum is light and robust. Calibration Unit: Leak Check & Flow rate measurement adaptor.</p> <p>Extra Specifications:</p> <ol style="list-style-type: none"> 1. PTFE fitted with identification number for each –filer -pore size 2mm dia 46.2mm with pp ring supported suitable for monitoring of PM 2.5 dust, sealed pocket of 50 discs (1no) indigenous make 2. 37 diameter GF/A filter paper indigenous make for wins impactor / 10 pm dust monitoring 10sheet. Filter carrier with cover, silicon oil gas monitoring provision with chemical kit box <p>Price shall be inclusive of packing, forwarding, freight, delivery at door, installation and demonstration with warranty inclusive of all duties and taxes</p>
08	Gas Chromatography	<ol style="list-style-type: none"> 1. Should be able to analyse Hydrocarbons, CO, CO₂, NO₂, SO₂ 2. Fully Automated Microprocessor controlled GC with Programmable Pneumatic Controlled (PPC) and extensive self-diagnostic facility. 3. Inbuilt touch screen graphical user interface for easy control of the system. 4. Dual channel, real time signal display on the Touch Screen

		<p><u>OVEN</u> Temperature Range : 10°C above Ambient to 450°C, Cooling Rate: 250°C - 50°C within 5 minutes or less, Rate: 0.1 - 45°C/min minimum increment 0.1°C. Column Overheat Protection : User settable up to 450°C</p> <p><u>INJECTORS: Position-1</u> Split/splitless capillary injector with PPC Temperature Range : 50°C to 450°C in 1°C increment or better, Should have built-in Charcoal Trap in split vent. Easy adjustment of split ratio.</p> <p><u>Detector: Position-1</u> Flame Ionization Detector (FID) with PPC</p> <ul style="list-style-type: none"> • Temperature Range: 100 °C to 450 °C or higher in 1 °C increments • Minimum detection: < 3 *10⁻¹² g C/sec nonane or lower • Linearity: > 10⁶ or better • No Makeup gas should require for operation of FID <p><u>INJECTORS: Position-2</u> Packed-column injector with PPC</p> <p>Removable glass liner for trapping nonvolatile residues, Adapter for on-column injection to wide-bore capillary columns, 50 °C to 450 °C in 1 °C increments, 1/8-in. fitting, 1/4-in. column adapter available, PPC pneumatics – programmed flow or pressure includes readout which displays pressure or column flow</p> <p><u>Detector: Position-2</u> Operating temperature 100 °C to 350 °C in 1 °C increments, Sensitivity 9 µV/ppm nonane at 160 mA at the bridge with a detector temperature of 100 °C, Minimum detectable quantity Typically < 1 ppm nonane, Linearity > 10⁵</p> <p><u>Columns:</u> quote suitable column for analysis of hydrocarbon, Oxygen, Hydrogen, Nitrogen etc</p> <p><u>Syringe:</u> suitable Liquid & gas syringe must be quoted</p> <p><u>Software:</u> Software for instrument operation and data handling must be quoted.</p> <p><u>Indigenous Items:</u> Vendor must quote the following items alongwith instrument</p> <p>UHP grade Nitrogen Gas Cylinder, UHP grade Hydrogen Gas cylinder, UHP grade Zero-air Gas Cylinder, UHP grade Helium Gas Cylinder, Double Stage SS Gas Regulator for the above Gases Branded PC with Printer</p> <p>Price shall be inclusive of packing, forwarding, freight,</p>
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		delivery at door, installation and demonstration with warranty inclusive of all duties and taxes
09	Stack monitoring Kit	<p>Envirotech kit model VSS1 preferable</p> <p>Gaseous sampler attachment APM-411TE:</p> <p>a) Stack sampler VSS1 consisting of instrument panel with integrated ice tray assembly having 4 glass impinger</p> <p>b) Prove set or set of interconnection hose pipes</p> <p>Accessories:</p> <p>Stack Temperature Range:Ambient to 600 deg C read on a Digital Pyrometer</p> <p>Stack Velocity Range:3to60 m/sec</p> <p>Thermocouple:TIC sensor in SS 304 casing, length of insertion: 0.6 m with 2m long cable</p> <p>Manometer:Digital with 0-1300 mm of H₂O range</p> <p>Pitot Tube:Calibrated S-type fabricated -SS 304, 0.6 m extendable to 1.2m</p> <p>Particulate Sampling:2-30 lpm collection on thimble type filter up to 0.3 micron rating</p> <p>Gaseous Sampling:0.2-3 lpm collection in a set of Borosilicate glass impingers</p> <p>Rotameter:Plastic body with 2% FSD accuracy, 0-30 lpm PM and 0 - 3 lpm for GAS</p> <p>Sampling Probe:Made from SS 304 tube, 0.6 m length extendable to 1.2m</p> <p>Filter Holder:Fabricated from SS 304 tube suitable to hold either cellulose filtration thimble (Size 28mm 10 X 100 mm long) or glass micro fibre thimble (size19mm ID X 90mm long)</p> <p>Nozzles Digital:A set of 3 stainless steel nozzles</p> <p>Clock:0-60 minutes, 1second readout with start and stop switches</p> <p>Sampling Train:1 No. of 240 ml cap. & 2 No. of 120 ml cap. borosilicate glass impingers accommodated in ice tray, placed on the rear side of instrument panel with a provision to keep ice</p> <p>Vacuum Pump:Monoblock Rotary Vane type, oil lubricated, single phase::: motor (230V) with more than 50. lpm free flow capacity</p> <p>1. Vacuum pump assembly with the following accessories</p> <p>Heated probe system suitable for use in high moistening conditions</p> <p>ORSAT apparatus</p> <p>Fluorine kit, Cyclone assembly, Glass NO_x collection assembly, Reagent kit for sampling and analysis consisting of essential reagent for sampling SO₂, NO_x tools essential accessories and standard</p>

		<p>method for source emission monitoring, Extension vacuum hose five metal braided 10mms long</p> <p>Carbon monitoring –</p> <p>Filtration thimbles Whatman make of 25 thimble, Cellulose size 28 x 100mm, Glass impinge 240 ml capacity = extra 2, Glass impinge 120 ml capacity = extra 3</p> <p>Price shall be inclusive of packing, forwarding, freight, delivery at door, installation and demonstration with warranty inclusive of all duties and taxes</p>
10	Fume Cupboard	<p>Face Velocity: 90 - 100 FPM/0.5m/sec. (Average at 12" Sash opening Fume Hood), Air Volume: 1000 CFM (Designed for Full dooropening)</p> <p>Air Flow Type: Standard</p> <p>Inbuilt Centrifugal Blower unit Fluorescent tubes with safety electrical, Internally located Electric Plugs, Gas Vacuum & Air Connections, Counter balanced sliding up & down front sash(door)</p> <p>Price shall be inclusive of packing, forwarding, freight, delivery at door, installation and demonstration with warranty inclusive of all duties and taxes</p>
11	Microwave Pyrolysis reactor	<p>Temp: Should be able to attain a max temp of 600°C (asbestos and bricks, are usually used to protect the microwave oven from high temperature damage and at the same time to avoid the loss of heat)</p> <p>A vacuum pump</p> <p>Heating rate: Variable: 20°C/min, 50° C/min, 100°C/min</p> <p>Stirring: Provision for stirring the reaction at high temp</p> <p>Cylindrical-shape quartz reactor of 100 mm length and 120 mm diameter</p> <p>Microwave oven (up to 1kW), magnetrons of the microwave oven are controlled by an electronic temperature controller that maintains the temperature at the set point within a user-specified tolerance by switching the magnetrons on and off appropriately</p> <p>Thermocouple probes, Collection flasks, Cooling lines/condenser (typically cycled by cooling water of 0–7°C), Some connection tubes.</p> <p>Price shall be inclusive of packing, forwarding, freight, delivery at door, installation and demonstration with warranty inclusive of all duties and taxes</p>
12	Soil testing Kit	<p>For testing of N, K, P and organic carbon along with reagent,</p>

		chemicals and testing box Price shall be inclusive of packing, forwarding, freight, delivery at door, installation and demonstration with warranty inclusive of all duties and taxes
13	Cyclic voltameter	Power Li-ion battery, Interface LCD · PC Interface USB, Potential range ± 2 V, Maximum measurable current ± 200 μ A, Current resolution 0.1% of current range, Potential resolution 1 mV Price shall be inclusive of packing, forwarding, freight, delivery at door, installation and demonstration with warranty inclusive of all duties and taxes
14	LCD Projector	DLP, WXGA, 3100IM, 2000:1 contract ratio & 10000:1 high contract ratio, HDMI, Speaker, Audio in / out Price shall be inclusive of packing, forwarding, freight, delivery at door, installation and demonstration with warranty inclusive of all duties and taxes
15	Laptop	Windows 10 home single language, windows pro, 1TB, 5400rpm sata, 8gb, DDR4-2133 sdram (1x 8gb) 15.6 inch diagonal HD SVA anti glare slim led back lit Price shall be inclusive of packing, forwarding, freight, delivery at door, installation and demonstration with warranty inclusive of all duties and taxes
16	2 ton A.C *3Nos	With 500KVA stabilizer with fitting, installation with warranty Price shall be inclusive of packing, forwarding, freight, delivery at door, installation and demonstration with warranty inclusive of all duties and taxes

List of Chemicals

Sl. No.	Chemical Name
1	Conc. H ₂ SO ₄
2	Conc. HNO ₃
3	Conc. H ₃ PO ₄

4	Conc. HCl
5	Chloroform
6	Ethyl Alcohol
7	Methyl Alcohol
8	Petroleum Ether
9	2,5-Diphenyl carbazide
10	Ferro Ammonium Sulphate
11	Mercury Chloride
12	Potassium Iodide
13	Sodium Thiosulphate
14	Phenolphthalein
15	Ammonium Acetate
16	KH_2PO_4
17	Na_2HPO_4
18	$\text{Na}_2\text{B}_4\text{O}_7$
19	NaOH
20	NH_4OH
21	KOH
22	Starch
23	Manganous Sulphate
24	KH_2PO_4
25	NH_4Cl
26	FeCl_3
27	$\text{K}_2\text{Cr}_2\text{O}_7$
28	Ferroun indicator
29	Mercuric Sulphate
30	Silver Sulphate
31	HgI_2

32	Sulphanilic Acid
33	Sodium Arsenite
34	KNO ₃
35	AgSO ₄
36	Sodium Acetate
37	Sodium Nitrite
38	Copper Sulphate
39	Sodium Chloride
40	Potassium Sulphate
41	Ammonium Molybdate
42	Stannous Chloride
43	Na ₂ SiF ₄
44	EDTA
45	Silver Diethyl dithio carbamate
46	Potassium Permanganate
47	Sodium Azide
48	Hydrogen Peroxide
49	Sodium Potassium Tetranate
50	Hydroxyl Amine Hydrochloride
51	Dithiozone
52	Tartaric Acid
53	Zn Metal
54	Sodium Ascorbate
55	Zincon Reagent
56	Chloral Hydrate
57	HgCl ₂
58	Potassium Persulphate
59	Stannous Chloride

60	Perchloric Acid
61	Diphenyl Amine indicator
62	Sodium Fluoride
63	Zirconyl Chloride
64	SPADNS reagent
65	P-nitro Toluene
66	P-nitro Benzaldehyde
67	p-Chloro Acetophenone
68	P-chloro Benzaldehyde
69	1,2-dibromo Ethane
70	1,4-dibromo Butane
71	1,6-dibromo hexane
72	1,8-dibromo octane
73	1,12-dibromo dodacane
74	1,16-dibromo hexadecane
75	P-N,N-dimethyl amino benzaldehyde
76	P-Methyl Benzaldehyde
77	P-Amino Benzaldehyde
78	Cetyl Trimethyl Ammonium Bromide
79	Sodium Dodecyl Sulphate
80	Triton X-114
81	P-thiomethoxy Benzaldehyde
82	D ₂ O(Heavy Water) Vials
83	Ammonium thiocyanate
84	Phosphorous Pentoxide
85	Hexane
86	Cyclohexane
87	1-Propanol

88	2-Propanol
89	1-Butanol
90	2-Butanol
91	Amyl Alcohol
92	Decanol
93	Biphenyl
94	α -Cyclodextrin
95	β - Cyclodextrin
96	γ - Cyclodextrin
97	Calix[4]arene
98	D-Glucose
99	Dextrose
100	Fructose
101	Ethylene Glycol
102	Glycerol
103	Acetone
104	Acetophenone
105	Glycine
106	Alanine
107	Phenyl Alanine
108	Cysteine
109	Succinic Acid
110	Glyoxalic Acid
111	Adipic Acid
112	Cinnamic Acid
113	Dimethyl Sulphate
114	O-diamino benzene
115	O-tolunitrile

116	Benzoyl Chloride
117	Sodium Carbonate
118	Oxalic Acid
119	Ammonium Chloride
120	Erichrome Black-T
121	Calcium Chloride
122	Sodium thiosulphate
123	Manganese Sulphate
124	Potassium Iodide
125	Acetic Acid
126	Calcium Carbonate
127	Acetyl Chloride
128	Pyridine
129	Salicylic Acid
130	Filter Paper(Ordinary)
131	Whatman LP2 Filter Paper
132	Activate Alumina
133	Zeolite(ZSN-5)
134	Kaoline
135	Saponile
136	Montrorilonite
137	Smectite
138	Zirconia
139	Ceria
140	Silica(Activated)
141	Barium Chloride
142	Potassium Sulphate
143	Barium Sulphate

144	Sodium Acetate
145	Ammonium Nitrate
146	Nickel Ammonium Sulphate
147	Dimethyl Glyoxime
148	Zinc Oxide
149	Di-ammonium Hydrogen Phosphate
150	Magnesium Sulphate
151	Murexide indicator
152	Solochrome Black 6B indicator
153	Xylenol indicator
154	Variamine blueB indicator
155	Pyrocatechol Violet
156	Fast Sulfon black
157	2-Hydroxy-1-naphthaldehyde
158	2,3,4-Trimethoxybenzaldehyde
159	2,4-Dimethoxybenzaldehyde
160	2,4-Dihydroxybenzaldehyde
161	2,4,6-Trihydroxybenzaldehyde
162	2,4-Dinitrobenzaldehyde
163	2,4,6-Trinitrobenzaldehyde
164	Sodium Bicarbonate
165	Barium Diphenylamine Sulphonate (5g)
166	Palladium acetate (5g)
167	tris(dibenzylideneacetone)dipalladium(0)
168	Palladium(II) trifluoroacetate

Glasswares for Dept of Chemistry

Sl.No.	Item	
01	Burette	50ml
02	Pipettee	10ml
03	Pipettee	25ml
04	Pipettee	05ml
05	Pipettee	2.5ml
06	Volumetric flask	1000ml
07	Volumetric flask	500ml
08	Volumetric flask	250ml
09	Volumetric flask	100ml
10	Volumetric flask	50ml
11	Volumetric flask	25ml
12	Measuring Cylinders	250ml 100ml 50ml 10ml
13	Glassco Bottle top dispenser	10to100ml Capacity 500ml
14	Separating funnel	500ml Capacity 100ml capacity
15	Soxhlet extrastion apperates	250ml

		500ml & 1000ml capacity
16	Distillation apparatus with condenser, inter changeable joint	200ml 500ml
17	Beaker	500ml
18	Erlenmeyer flasks	250ml
19	Erlenmeyer flasks Glass	250ml
20	Pestle & Mortar	(75X48)mm
21	Triparted Stand Round top	(125X150mm)
22	Meeker burner with flame Regulator with stopcock	
23	Spatula one end spoon one end flat both plastic & steel	
24	Funnel dia plastic, Glass	100mm 50ml
25	BOD bottle	300ml
26	Wash bottle plastic	500ml
27	Reaction vial with teflon cap	5ml 10ml 50ml

Veer Surendra sai university of technology, burla, Odisha-768018

Corrigendum

No. VSSUT/ CHEM./ 420/2017

Dated: 26/09/17

In partial modification to the tender call notice No. VSSUT/ CHEM./ 420/2017 dated 21.09.17 for the purchase of equipments, glassware and chemicals in VSSUT published in the Odisha daily edition (ALL ODISHA EDITION) of THE SAMAJ dated 22.09.17, the All India edition of "The Indian Express" dated 23.09.17 and also which was published in the university website, www.vssut.ac.in on the same date, it is hereby informed for all concerned that the additional specifications for instruments and glassware to be incorporated along with original tender notice.


REGISTRAR


Memo No. VSSUT/CHEM./ 421/2017

Dated 26/09/2017

Copy to:

- 1) M/s Display lines, 219, Saheed Nagar, Bhubaneswar-751007 with a request to publish the above advertisement in one issue of the Odisha daily edition (ALL ODISHA EDITION) of THE SAMAJ and the All India edition of The Indian Express using minimum space at I & PR approved/lowest rates. The bills may be sent to the Comptroller of Finance, VSSUT, Burla- 768018 in TRIPLICATE along with copies of the paper in which the publication is made, for necessary payment.
- 2) The University/Department Notice Board for publicity.
- 3) Dean F&P, with a request to hoist the tender call notice in the University web site www.vssut.ac.in for wide publicity.
- 4) S.O. Accounts, for information and necessary action.
- 5) Steno to Registrar for record. This is based on the approval of the Hon'ble Vice Chancellor at Note page N-1 of the File No VSSUT/CHEM/42 of the Department of Chemistry.


REGISTRAR


26/09/17

Additional specifications for instruments and glassware

01. Atomic Absorption Spectrophotometer

PC control automatic, 8-lamp turret, air-C₂H₂ flame and N₂O separate burner, D₂ background correction. With Air Compressor Lamp; Hollow Cathode Lamp (Cr, Cu, Fe, Mn, Ni, Ag, Cd, Pb, Zn, Ca, Mg, As, Hg, Se, Co, Mo, Ba, Sn, Li), with integrated graphite furnace of 3000°C.

8. Gas Chromatography

General:

2. Fully Automated Microprocessor controlled GC with Programmable Pneumatic Controlled (PPC)/ **Electronic Pneumatic Controlled (EPC)** and extensive self-diagnostic facility.
3. **Key pad**/Inbuilt touch screen graphical user interface for easy control of the system.

Detector: Position-2: (TCD)

Operating temperature 100 °C to 350 °C in 1 °C increments

Minimum detection: <800pg

Sensitivity 9 µV/ppm nonane at 160 mA at the bridge with a detector temperature of 100 °C

Minimum detectable quantity Typically < 1 ppm nonane

Linearity > 10⁵

Indigenous Items:

Vendor must quote the following items alongwith instrument

UHP grade Nitrogen Gas Cylinder

UHP grade Hydrogen Gas cylinder

UHP grade Zero-air Gas Cylinder

UHP grade Helium Gas Cylinder


Double Stage SS Gas Regulator for the above Gases

Branded PC with Printer

Online UPS 5 kVA (30min battery backup).

Glassware

Sl.No	Item
1.	Sintered Glass Crucible (G3, G4, G5)
2.	Tubes for Gooch Crucibles
3.	Funnels for Gooch crucibles
4.	Kips Apparatus
5.	Chromatographic columns of following different sizes (diameter 1cm, length minimum 50cm), (diameter 2cm, length minimum 75cm), (diameter 3cm, length minimum 75cm), (diameter 5cm, length minimum 75cm),
6.	Test tubes (5ml, 10ml, 25ml, 50ml)
7.	Glass syringes(1ml, 2ml, 5ml, 10ml)
8.	Syringe needles(6mm, 8mm and 12.7mm)
9.	Porcelain crucibles and covers (50ml, 100ml and 250ml)
10.	Erlenmeyer flasks (25ml 50ml, 100ml, 500ml)
11.	Round bottom flasks(5ml, 10ml, 25ml, 50ml, 100ml)
12.	MAGNETIC STIRRING BARS (8 Dia x 14Length mm, 8 Dia x 22, 9.5 x 14 Length mm)


26/09/17