

Ref. No: RGUKT/Proc/Ch.Engg/ALI/T10/E-2013, dated: 03.08.2013

BID DOCUMENT

**Open Competitive Bid (OCB)
(e-Procurement)**

For

**Supply and Installation of Equipments
To the Analytical and Laboratory Instruments of
Chemical Engineering Department
at the three campuses of
Rajiv Gandhi University of Knowledge Technologies**

Proprietary & Confidential



**RAJIV GANDHI UNIVERSITY OF KNOWLEDGE
TECHNOLOGIES**

**Ground Floor, Vindhya C4 Building,
IIIT-H Campus, Gachibowli**

HYDERABAD- 500 032

Phone: 040-23001830

Proprietary & Confidential

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News paper advertisement

E-Procurement Tender Notice

RAJIV GANDHI UNIVERSITY OF KNOWLEDGE TECHNOLOGIES



**Ground Floor, Vindhya C4 building, IIIT- H Campus,
Gachibowli, HYDERABAD- 500 032**

Phone: 040-23001830

Ref: RGUKT/Proc/Ch.Engg/ALI /T10/E-2013 dated: 03.8.2013

Online tenders are hereby invited from reputed **manufacturer/ authorized representatives** for supply and installation of equipments for the following labs of Chemical Engineering Department to the three RGUKT campuses located at Basar in Adilabad dist, Nuzvid in Krishna dist and R.K. Valley in YSR Kadapa dist, in AP.

- i) Mass Transfer Operations Lab
- ii) Chemical Reaction Engineering Lab
- iii) Analytical and Laboratory Instruments

1. Tenderers can download the tender schedules from e-procurement Platform www.eprocurement.gov.in from 04.08.2013 onwards. Tenderers need to submit the bids separately for each Lab online by uploading all the required documents through www.eprocurement.gov.in. **The last date for submission of tenders online is 23.08.2013 upto 05:00PM**

For further details regarding Tender Notification & Specifications please visit website: www.eprocurement.gov.in and www.rgukt.in

Date: 03.08.2013

**Sd/-
Registrar**

Time schedule of Tender related events
(Analytical and Laboratory Instruments)

Bid calling date	03 .08.2013
Bid Document fee	Rs. 1,000/- (By way of DD from any Nationalized Bank)
Bid Documents Downloading Start date	04.08.2013
Bid Document Downloading End Date	23.08 .2013 till 04:00PM
Pre Bid Meeting	13.08.2013 at 03:00PM
Last date for uploading documents online	23 .08.2013 at 05:00 PM.
Last date for Submission of documents (hard copies)	24.08.2013 at 04:00 PM.
Technical Bid opening date/time	26.08.2013 at 05:00 PM.
Price Bid opening date/time	27 .08.2013 at 05.00 PM
Contact person	Registrar, RGUKT
Reference No.	RGUKT/Proc/ Ch.Engg/ALI/T10/E-2013, dated 03 .08.2013

Note: The dates stipulated above are firm and under no circumstances they will be relaxed unless otherwise extended by an official notification or happen to be Public Holidays. For the assistance in the online submission issues, the bidder may contact the help desk of M/s. Vayam Technologies (e-procurement) at their e-mail address: helpdesk.eproc@vayamtech.com

SECTION - I
INVITATION FOR BIDS

Reference: No: RGUKT/Proc/Ch.Engg/ALI/T10/E-2013 Dated: 03.08.2013

Subject: Tender for supply and installation of equipments to the Analytical and Laboratory Instruments of Chemical Engineering Department to the three campuses of RGUKT located at Basar (Adilabad Dist), Nuzvid (Krishna Dist) and RK Valley (Kadapa Dist) – Reg..

Sir/Madam,

- 1) Bids are invited on the e-procurement platform from the eligible manufacturers or their authorized distributors for supply and installation of equipments to the Analytical and Laboratory Instruments of Chemical Engineering Department to three campuses of RGUKT located at Basara (Adilabad Dist), Nuzvid (Krishna Dist) and R K Valley (YSR Kadapa Dist). The details of bidding conditions and other terms can be downloaded from the electronic procurement platform of Government of Andhra Pradesh i.e. www.eprocurement.gov.in
- 2) Bidders would be required to register on the e-Procurement market place “www.eprocurement.gov.in” and submit their bids online. On registration with the e-Procurement market place they will be provided with a user id and password by the system through which they can submit their bids online.
- 3) The bidders need to scan and upload the required documents as per the Check list given. Such uploaded documents pertaining to technical bid need to be attached to the tender while submitting the bids on line. The attested copies of all these uploaded documents of technical bid, signed undertaking of tenderer should be submitted off line to Registrar, RGUKT, Hyderabad by 04:00 PM of 24.08.2013. The RGUKT will consider only the bids submitted through on-line over the copies of the paper based bids.
- 4)
 - a) The participating bidder/s will have to pay tender processing fee (non-refundable) for the amounts specified in the Schedule of Requirements, in the form of Demand Draft drawn from any Nationalized Bank, in favour of Registrar, RGUKT, Hyderabad. Payable at Hyderabad.
 - b) Further the bidder/s shall furnish, as part of it bid, the Bid security for the amounts specified in the Section-II of Tender Document be paid in the form of an unconditional and irrevocable Bank Guarantee issued by any

Nationalized bank in the standard format as shown in the Tender Schedule or a crossed Demand Draft drawn in favour of Registrar, RGUKT, Hyderabad along with bids.

- c) Further all the participating bidders have to electronically pay a non-refundable transaction fee to M/s. APTS, the service provider through "Payment Gateway Service on E-Procurement platform", as per the Government Orders placed on the e-procurement website.
- d) RGUKT will not accept the tenders from blacklisted companies or undependable Suppliers whose past performance with RGUKT was found poor due to delayed and/or erratic supplies and those with frequent product failures, and also against whom there have been adverse reports of Sub-Standard Quality / Poor Service of Equipment supplies, as defined in the other parts of the Bidding document.

For any clarification and further details on the above tender please contact Telephone No: 040-23001830 or Contact in Person during office hours.

SECTION-II

STATEMENT OF IMPORTANT LIMITS/VALUES RELATED TO BID

Item	Description
EMD	Rs. 75,000/- by way of Demand Draft from any Nationalized Bank or by way of irrevocable bank guarantee from any Nationalized Bank only. DD/BG from other than Nationalized Banks will not be accepted.
Bid Validity Period	90 days from the date of opening of Financial bid
EMD Validity Period	90 days from the date of opening of Financial bid
Warranty Period	3 years Comprehensive Warranty
Variation in quantities/number of residents	± 40 %
Period for furnishing performance Security Deposit	Within 15 days from date of receipt of award
Delivery Schedule	Bidder shall deliver the goods in one single lot within 120 days from the date of award of the contract.
Performance security value	<ol style="list-style-type: none">1. 5% of contract value by way of irrevocable Bank Guarantee from any Nationalized Bank2. 10% of contract value by way of irrevocable Bank Guarantee in case of equipment is of foreign origin
Performance security validity period	38 months from award of contract (including 30 days of installation period)

Period for signing the order Acceptance	Within 15 days from date of receipt of notification of award
PAYMENT TERMS	
On delivery at user site	<p>Payment for goods and services shall be made in Indian rupees as follows.</p> <ol style="list-style-type: none"> 1. 80% of payment will be paid after installation, commissioning 2. Balance 20% will be paid after 3 months after obtaining the satisfactory certificate from the Director, RGUKT IITs. 3. In case of equipment from foreign country LC will be opened for 100% and 90% of payment will be paid on delivery & submission of documents and remaining 10% will be paid after installation and commission.
Maximum Liquidated Damages for late deliveries	<p>For delays:- If the supplier fails to deliver any (or) all of the goods or perform the services within the time period specified in the contract the purchaser shall without prejudice to its other remedies under the contract deduct from the contract price as liquidated damages a sum equivalent to 0.25% of the contract value per day until actual delivery or performance up to a maximum deduction of 10% of the delayed goods or services contract price. Once the maximum deduction is reached, the purchaser may consider the termination of the contract duly forfeiting the performance security etc.,</p>
Placing work order	<ul style="list-style-type: none"> ➤ RGUKT will place order on identified successful bidder. ➤ All the payments shall be made directly by RGUKT to the successful bidder as per the tender terms and conditions. ➤ If decided RGUKT can split the order basing on the quoted price and service track record. The decision of RGUKT is final in this regard.

Transaction Fee	Transaction fee: All the participating bidders who submit the bids have to pay an amount @ 0.03% of their final bid value online with a cap of Rs. 10,000/- for quoted value of purchase up to Rs.50 crores and Rs.25000/- if the purchase value is above Rs.50 crores & service tax applicable @ 12.36% as levied by Govt. of India on transaction fee through online in favour of MD, APTS. The amount payable to APTS is non refundable.
Transaction Fee Payable to	The Managing Director, A.P. Technology Services Ltd., Hyderabad
Bid submission	Online. Bidders are requested to submit the bids after issue of minutes of the pre bid meeting duly considering the changes made if any, during the pre bid meeting. Bidders are totally responsible for incorporating/complying the changes/amendments issued if any during pre bid meeting in their bid.
Procedure for Bid Submission	Bids shall be submitted online on www.eprocurement.gov.in platform <ol style="list-style-type: none"> 1. The participating bidders in the tender should register themselves free of cost on e-procurement platform in the website www.eprocurement.gov.in 2. Bidders can log-in to e-procurement platform in Secure mode only by signing with the Digital certificates. 3. The bidders who are desirous of participating in e-procurement shall submit their technical bids, price bids as per the standard formats available at the e-market place. 4. The bidders should scan and upload the respective documents in Pre-Qualification and Technical bid documentation including EMD. The bidders shall sign on all the statements, documents certificates uploaded by them, owning responsibility for their correctness/authenticity.

	<p>5. The hard copies of all the uploaded Technical / Price bid, to be attested by a Gazetted Officer or properly notarized.</p> <p>6. The rates should be quoted in online only</p>
Other conditions	<p>1. After uploading the documents, the copies of the uploaded technical bid documents, for evaluation and original Demand Drafts in respect of Bid Security and Bid document fee are to be submitted by the bidder to the “The Registrar, RGUKT, Vindhya-C4 Building, IIIT Campus, Gachibowli, Hyderabad-32”, by 04:00 PM on 24.08.2013.</p> <p>Failure to furnish any of the uploaded documents, certificates, will entitled in rejection of the bid. The RGUKT shall not hold any risk on account of postal delay. Similarly, if any of the certificates, documents, etc., furnished by the Bidder are found to be false / fabricated / bogus, the bidder will be disqualified, blacklisted, action will be initiated as deemed fit and the Bid Security will be forfeited.</p> <p>2. RGUKT will not hold any risk and responsibility regulating non-visibility of the scanned and uploaded documents.</p> <p>3. The Documents that are uploaded online on e-market place will only be considered for Bid Evaluation.</p> <p>4. Important Notice to Contractors, Suppliers and Department users (i) In the endeavor to bring total automation of processes in e-Procurement, the Govt. has issued orders vide G.O.Ms.No. 13 dated. 5.7.2006 permitting integration of electronic Payment Gateway of ICICI/HDFC/Axis Banks with e-Procurement platform, which provides a facility to participating suppliers / contractors to electronically pay the transaction fee online using their credit cards.</p>

SECTION-III

TENDER SCHEDULE

1. PREAMBLE:

The Registrar, Rajiv Gandhi University of Knowledge Technologies (RGUKT), Hyderabad invites tenders for supply and installation of Analytical and Laboratory Instruments to its three campuses located at Basar (Adilabad District), Nuzvid (Krishna District) and RK Valley (YSR Kadapa District), through e-procurement platform.

2. SCOPE OF WORK

Supply and installation of Analytical and Laboratory Instruments to the three campuses of RGUKT located at Basara (Adilabad Dist), Nuzvid (Krishna Dist) and R K Valley (YSR Dist).

3. EARNEST MONEY DEPOSIT / SECURITY DEPOSIT:

3.1 The tender should be accompanied by Earnest Money Deposit (EMD) for **Rs.75,000/-** by way of crossed Demand Draft/ Bank Guarantee issued/ drawn from any Nationalized Bank in favor of "Registrar, RGUKT" payable at Hyderabad. Tenders received without EMD will be summarily rejected.

3.2 Forfeiture of the EMD will be made in the following events:

3.2.1 Withdrawal of bid during the bid validity period.

3.2.2 In case of successful bidder, if the bidder fails to sign the contract in time or fails to submit performance guarantee.

4. PERFORMANCE SECURITY:

4.1 The successful bidder has to deposit 5% for indigenous equipments and 10% in case of imported equipment (foreign origin) of the total contract value as performance security deposit in the form of Bank Guarantee from any Nationalized Bank.

4.2 The Performance Security Deposit / Bank Guarantee of successful bidder will be retained for the period of contract in force and will be

returned after expiry of contract, after deducting the outstanding liabilities if any.

- 4.3 The Performance Security Deposit / Bank Guarantee shall not carry any interest.

5 ELIGIBILITY CRITERIA

5.1 This bid is open to all firms within India who are eligible to do business under relevant Indian laws as in force at the time of bidding, subject to meeting the pre-qualification criterion. They should provide list of customers of previous supply of similar/ same items to IITs, NIT's or Central Universities or any Academic Institute of National repute with contact details. Copies of orders received from the reputed firms on bidding firm need to be submitted.

5.2 The bidder should have servicing facility or work shop with in India so the provision of service is possible at a short notice and without incurrance of delay.

5.3 The Bidding firm should have minimum turnover as follows:

Bid Value offered against the tender call	Last financial year's business turnover
Up to 25 lakhs	50 lakhs
More than 25 lakhs	1 crore

The bidder should have adequate experience in supply of such materials as required in the tender. Bidder should furnish proof of having supplied such materials as required in the tender in the previous financial year ending 31st March 2012 as mentioned above. A certificate indicating the Turn Over value details (in Rupees) of subject material, during the financial year 2012-13 (for the year ending 31.03.2013) from a Firm of Chartered Accountants must be enclosed (in original) as a proof for Turnover. The Turn Over of the subject Material must be separately indicated in the certificate.

- 5.4 The bidder should furnish satisfactory performance certificate from the parties concerned to whom bulk supplies were effected, in case such supplies were made. RGUKT may contact any such parties to elicit details.
- 5.5 Bidder should be registered under VAT Act/CST Act with the relevant State Sales Tax Authorities. He should furnish along with the bid document, the relevant VAT/CST Registration Document and PAN / TAN Card copies.
- 5.6 All bidders shall also include the following information and documents with their tenders (in the Technical bid cover)
- 5.6.1 Copies of original documents defining the constitution or legal status, place of registration, and principal place of business of the bidding firm/entity; written power of attorney of the signatory of the Bid to commit the Bidder.
- 5.6.2 Machinery/equipment owned by the bidder and number of employees.
- 5.6.3 Latest Income Tax returns and **VAT/ CST** Returns filed.
- 5.6.4 List of Present Clientele with contact addresses & telephone numbers.
- 5.7 All the certificates furnished along with technical bids should be attested by a Gazetted Officer, counter signed by bidder along with their seal.

The bidders must submit all relevant documentary evidence to support their claim for eligibility in placing bid. **The tenders received without the above documents will be rejected.**

6. INSTRUCTIONS TO BIDDERS

- 6.1 Tenders with over writings, alterations etc., will not be admitted unless they are attested by the bidder. Where there is a discrepancy between the amount (Rupees) in figures and words, the price, which is least of the two, will prevail.
- 6.2 Bid should be strictly in conformity with the Terms and Conditions mentioned in the tender schedule.
- 6.3 Bidders are expected to examine all the terms and instructions mentioned in the tender schedule and prepare their proposals accordingly. Failure to provide all requisite information will be at the bidders' own risk and may result in the rejection of the tender.

- 6.4 All assertions made in connection with the tender are to be supported / substantiated by relevant documents. The Registrar, RGUKT reserves the right to verify the credentials of the bidder as per the eligibility criteria.
- 6.5 The Registrar, RGUKT will notify the bidder whose tender has been accepted.
- 6.6 The successful bidder shall execute an agreement with RGUKT on Non-judicial stamp paper worth Rs.100.00 agreeing to all the conditions of the contract 15 days upon intimation of acceptance of Tender. The successful bidder has to submit performance security guarantee after taking Letter of Intent but before having contract agreement. Failure on enter into an agreement within the stipulated time will result in forfeiture of the EMD.

The Registrar, RGUKT reserves the right to issue instructions / modifications at any point of time before award of contract.

7. METHOD OF SUBMISSION:

Bids shall be submitted online on www.eprocurement.gov.in Platform.

- 7.1. The participating bidders in the tender should register themselves free of cost on e-procurement platform in the website www.eprocurement.gov.in
- 7.2. Bidders can log-in to e-procurement platform in Secure mode only by signing with the Digital certificates.
- 7.3. The bidders who are desirous of participating in e-procurement shall submit their technical bids, price bids as per the standard formats available at the e-market place.
- 7.4. The bidders shall sign on all the statements, documents certificates uploaded by them, owning responsibility for their correctness/authenticity.

- 7.5. The bidders should scan and upload the respective documents in Technical Documentation as per the check list.
- 7.6. After uploading the documents, the copies of the uploaded technical bid documents, for evaluation and original Demand Drafts in respect of Bid Security and Bid document fee are to be submitted by the bidder to the “The Registrar, RGUKT, Vindhya-C4 Building, IIIT Campus, Gachibowli, Hyderabad-32”, by **04:00 PM on 24.08.2013.**
- 7.7. Failure to furnish any of the uploaded documents, certificates, will entitled in rejection of the bid. The RGUKT shall not hold any risk on account of postal delay. Similarly, if any of the certificates, documents, etc., furnished by the Bidder are found to be false / fabricated / bogus, the bidder will be disqualified, blacklisted, action will be initiated as deemed fit and the Bid Security will be forfeited.
- 7.8. RGUKT will not hold any risk and responsibility regulating non-visibility of the scanned and uploaded documents.
- 7.9. The Documents that are uploaded online on e-market place will only be considered for Bid Evaluation.
- 7.10. Important Notice to Contractors, Suppliers and Department users (i) In the endeavor to bring total automation of processes in e-Procurement, the Govt.hasissued orders vide G.O.Ms.No. 13 dated. 5.7.2006 permitting integration of electronic Payment Gateway of ICICI/HDFC/Axis Banks with e-Procurement platform, which provides a facility to participating suppliers / contractors to electronically pay the transaction fee online using their credit cards.

In case of consortium either the prime bidder or the consortium partner can purchase the bid document. The bid can be filed either with user ID of prime bidder or consortium partner.

- 7.11. The rates should be quoted online only.

8 EVALUATION PROCEDURE:

- 8.1 The Tenders will be opened on 26.08.2013 at 05:00 PM by the Registrar, RGUKT or his authorized representative in the presence of the bidders or their authorized representative who may be present at that time.
- 8.2 The Technical Bids will be opened on 26.08.2013 at 05.00 PM. The tenders will be evaluated so as to ascertain the capability of the bidders to provide the material within the period mentioned above and also to assess whether the bidder satisfies the eligibility criteria as detailed in Clause 5 above.
- 8.3 The rejection of the bidder on technical grounds will be based on the failure to meet eligibility requirements.
- 8.4 The committee may reject a bid for non conformance of the specifications
- 8.5 Price Bid of only those bidders, who have fulfilled the eligibility criteria specified in Clause '5', 8.2 and 8.4 above, will be considered and who does not fulfill the eligibility criteria will not be considered and their tender stands rejected.
- 8.6 Any claims or disputes raised by the unsuccessful bidders in respect of selection process and non-allotment of award will have no legal validity and will not be enforceable against the RGUKT. No further correspondence will be entertained regarding the disqualification.
- 8.7 The Registrar, RGUKT reserves the right to accept or reject any / or all the tenders without assigning any reasons whatsoever. The Registrar, RGUKT also reserves the right to cancel the selection process for award of the contract at any time. The decision of the Registrar, RGUKT is final and binding.

9. PENALTY CONDITIONS :

9.1. 0.25% will be deducted from total value of the order for each day of delayed supply, and maximum of 10% will be deducted, if delay continues beyond 10% the contract is liable for termination. If contract is terminated the bidder forfeits the performance security Deposit etc.,

(NOTE: Delivery and installation must be made in a single lot within the delivery date agreed at the time of award of contract)

9.2. If the contract is terminated, as per clause 9.1 above the performance security will be en-cashed by Registrar, RGUKT and the bidder forfeits it.

9.3. In case after random check of equipment of the supplied lot, if it is found to be non conforming to the technical specifications then entire lot of such equipment will be rejected. In this case the Registrar, RGUKT shall encash the performance security deposit. The bidder shall have no claim to any payment towards the transaction.

10. VALIDITY OF THE CONTRACT

The contract quoted bid price shall remain valid for a period of 365 days from the date of issue of purchase order.

11. GENERAL TERMS & CONDITIONS

12.1. The supply, installation and Commissioning of Analytical and Laboratory Instruments shall be at the three IITs under the RGUKT located at

1. Basar, Adilabad District
2. Nuzvid, Krishna District
3. R K Valley (Idupulapaya), Kadapa District

12.2. Goods are to be supplied as per the specification and quantity. Details are annexed to this bid document.

12.3. Delivery and distribution:

General Clause: The goods need to be supplied (in case of equipment need to be installed and commissioned) within the stipulated time agreed upon in the contract.

If no such clause exists in the contract, this period may be treated as 120 days from the signing of the Supply Agreement Form.

Bidder shall deliver the goods in one lot within 120 days from the date of award of the contract.

12.4. All goods/ equipment supply shall carry a comprehensive warranty period of 3 years. Within the warranty period, in case of any damage to the supplied material like breakage, wear and tear, Electronics defects etc, it will be the responsibility of the supplier to trouble shoot, rectify and restore functioning or replace the damaged material within 7 working days.

12.5. A random sample of any item will be picked from the lot of items delivered by the bidder to the three campuses of RGUKT. This sample will be subjected to tests, if necessary at labs anywhere in the country to ensure compliance to specifications. If the result indicates non conformance, the entire lot will be rejected and the contract will stand terminated without any liability on the part of RGUKT. In addition, this event shall lead to the forfeiture of the performance security amount.

13. DISPUTES:

All disputes and differences of any kind whatsoever arising out of or in connection with the contract, whether during or after completion of contract will be settled at Hyderabad only, amicably in a spirit of co-operation and the RGUKT's decision shall be final on all such matters and shall be binding on the Bidder.

14. DISCLAIMER:

- 14.1. Even though adequate care has been taken in the preparation of this Tender Schedule the Bidder should satisfy himself that the Schedule is complete in all respects.
- 14.2. Neither RGUKT nor its employees make any representation or warranty as to the accuracy, reliability or completeness of the information in this tender schedule and it is not possible for the RGUKT to consider the investment objective, financial situation and particular needs of each party who reads or uses the Tender Schedule. Certain prospective Bidders may have a better knowledge of the scope of work than others. Each prospective Bidder should conduct his or her own investigations and analysis and check the accuracy, reliability and completeness of the information in the Tender schedule and obtain independent advice from appropriate sources.
- 14.3. Registrar, RGUKT reserves the right to reject any or all the Bids submitted in response to this request for Proposal at any stage without assigning any reasons whatsoever.
- 14.4. Registrar, RGUKT reserves the right to change any or all of the provisions of this tender Proposal.

15. REJECTION OF TENDERS:

- 15.1. The Registrar, RGUKT reserves the right to cancel the tender process and reject all tenders at any time prior to the award of contract without thereby incurring any liability as against the affected bidder or any obligations to inform the affected bidder of the grounds of acceptance or rejection.
- 15.2. No bidder is entitled to withdraw his or her offer after submission. In case of such withdrawal, the EMD deposited along with the tender schedule shall stand forfeited.

15.3. For breach of any of the conditions prescribed in the tender or as specified by the RGUKT from time to time, the EMD is liable to the forfeited. Decision of the Registrar, RGUKT in this regard is final and binding on bidders.

16. Requirement :

The following Analytical and Laboratory Instruments are required in the specifications mentioned here under for all the three Campuses of RGUKT located at Basar (Adilabad District), Nuzvid (Krishna District), RK Valley (YSR District)

Specifications of Analytical and Laboratory Instruments

CH3904: Analytical and Laboratory Instruments

S.No.	Instrument Name	Quantity per each campus	Total quantity
1	Hydro thermo anemometer	2	6
2	Bomb calorimeter	1	3
3	Indoor air quality meter	1	3
4	Bench top conductivity meter	1	3
5	Bench top PH meter	1	3
6	Vacuum desiccators	2	6
7	Dissolved oxygen meter kit	1	3
8	Hot plate cum Magnetic stirrer	1	3
9	Humidity meter	2	6
10	Hydrometer	2	6
11	Coriolis flow meter	1	3
12	Potentiometric titrator	1	3
13	Gas mass flow meter	1	3
14	Overhead stirrer	2	6
15	Orbital shaker	1	3
16	Constant heating bath	2	6
17	Centrifuge	3	9
18	Melting point apparatus	1	3
19	Moisture analyzer	1	3
20	Bench top turbidity meter	1	3
21	Tensio meter	1	3
22	Viscometer	1	3
23	Convection drying oven	1	3
24	Vacuum Oven	1	3
25	Muffle furnace	1	3
26	Lab water purification system	1	3
27	Pensky Mortens closed cup Flash point apparatus	1	3
28	Optical Tachometer	2	6

29	GC with FID and TCD	1	3
30	HPLC	1	3
31	UV Vis spectrophotometer	1	3
32	Oil fired Steam generator	1	3
33	Digital Refractometer	1	3
34	Capillary viscometer	3	9
35	Falling ball viscometer	3	9
36	Barometer	1	3
37	IR Thermometer	1	3
38	Glass thermometer	2	6
39	Differential Manometer	3	9
40	Digital manometer	2	6
41	Pressure gauges	2	6
42	Digital Multimeter	3	9
43	Power meter	2	6
44	Thermocouple module	1	3
45	PSA dehumidifier	1	3
46	Rota meters	2	6
47	Accumax micro pipette	2	6
48	Analytical Weighing balances	1	3

General terms and conditions to be followed by the suppliers/manufacturers

1. Any supplier / manufacturer is eligible to quote the rates for items partially or completely to which tenders are called for
2. While quoting the prices, it should be combined with prices of the accessories insisted in the specifications
3. Where ever additional accessories are essential to be quoted , however, allowed to do so by quoting separately
4. supplier / manufacturer should provide the clear data of utility requirement list
5. supplier / manufacturer should provide the instruction manual for both the experimental setups and instruments
6. supplier / manufacturer should provide the sample data & calculations and standard results for comparison in case of experimental setups

Specifications for instruments

1. Hydro -thermo anemometer

- To measure humidity, temperature and air velocity
- With display of simultaneous display of temperature- humidity or temperature-air velocity
- With dual line 3 digit LCD display
- Data hold and mini/max functions and Option for auto power off and low battery and over range alarms. PC interface with optional Data Acquisition Software
- Built-in low friction vane wheel improves accuracy of air velocity, precision thin-film capacitance humidity sensor for fast response, and thermistor for ambient temperature measurements
- Supply with batteries, type K general purpose thermocouple probe and traceable calibration
- Air velocity: 0-30 m/s with accuracy of $\pm 3\%$ FS
- Relative humidity = 10- 95 %, with accuracy of $\pm 4\%$ of rdg
- Temperature
 - Thermistor: 0 to 50 °C with accuracy of $\pm 1^\circ\text{C}$
 - Type K: -100 to 1200 °C with accuracy of $\pm 1^\circ\text{C}$

2. Bomb Calorimeter

- A combustion calorimeter for determining gross calorific values of liquid and solid samples
- With oxygen filling station, decomposition vessel, ignition and water handling

- Provision for operating modes of manual, isoperibolic, dynamic and time controlled
- With LED display for measurements
- isoperibol, measurement time: approx. 15-20 min
- dynamic, measurement time: approx. 7 -10 min
- manual time: approximately 18-20 min
- energy measurement up to 40 kJ
- with permissible relative humidity up to 80 %
- measuring accuracy of $\pm 0.1\%$
- Compact, integrated modular design for convenient operation
- Cooling water supply via thermostat
- Interface connections for each of the following: scale, printer, monitor & user friendly software and with data acquisition
- provision for the decomposition vessel to change over to use combustible crucibles
- supply with suitable accessories

3. Indoor air quality meter

- To measure CO₂, Temperature, humidity, dew point and wet bulb temperature
- Continuous 15000 to 20000 data logging or manual 80-100 sets
- Data hold, mini/max with time stamp and alarm, low/high CO₂ level indicators
- With inbuilt sensors for CO₂ and humidity
- With triple line display to view multiple parameters at once
- Compatible with battery and RS-232 cable to interface the computer
- Supply with probe, software, batteries, suitable cables and adaptors, NIST traceable calibration for CO₂ meters
- CO₂: 0 – 6000 ppm with resolution of 1 ppm
- Temperature: -20 to 60 °C with resolution of 0.1 °C

- Humidity: 10 – 90 % RH with resolution of 0.1 %

4. Bench top Conductivity meter

- To measure conductivity, TDS, salinity, resistivity and temperature
- With LCD display, Data hold, auto off and low battery indication
- With adjustable automatic temperature compensation
- Waterproof design to with stand environment
- Provision for running with batteries and supplied with batteries
- Supply with batteries, conductivity probe, electrode arm with base and conductivity calibration kit
- Conductivity: 0 – 2000 $\mu\text{S}/\text{cm}$ with accuracy of $\pm 1\%FS$
- TDS: 0- 2000 ppm with accuracy of 1 ppm or $\pm 1\%FS$
- Temperature: 0- 50 $^{\circ}\text{C}$ with accuracy of $\pm 1^{\circ}\text{C}$
- Salinity: 0-80 ppt
- Resistivity =20 ohm to 100 meag ohm

5. Bench top PH meter

- To measure PH of solutions
- A bench top PH meter with 0.001 PH resolution and ± 0.02 PH accuracy
- With storage and recall up to 500 sets of data and interface to PC with RS 232 cable
- Display of PH along temperature, electrode status, cal points, time and date
- Alarm for stabilization and recalibration measurements
- PH range: -2 to 20
- Temperature range: 10 -100 $^{\circ}\text{C}$ with accuracy of $\pm 0.5^{\circ}\text{C}$, resolution of 0.1
- Supply with ATC probe, PH electrode, electrode fill solution and all suitable cables and adapters

- Also supply with buffer pack – 500 ml of each 4, 7 and 10 buffer, all-in-one combination PH electrode, cable, epoxy body, single & double junction, BNC connector, and with NIST traceable calibration for PH

6. Vacuum Desiccators

- To store and preserve the moisture sensitive items
- Should be transparent, light weight and unbreakable
- Maximum vacuum with 28" Hg for 24 hours
- Material: polycarbonate
- Provide each of two quantities with various volumes 700 cc, 1500cc & 3000 cc

7. Dissolved Oxygen meter kit

- To measure oxygen concentration and temperature and to test the water quality
- With LCD dual display of oxygen and temperature, built in polarographic type oxygen probe
- With data hold of up to 100 points, min/max readings and auto off
- Built in RS-232 PC serial interface for data acquisition for storing data points
- Supply with PC software, galvanic dissolved oxygen probe, storage bottle, plastic carrying case, suitable cables and adapters, zero oxygen solution (500 ml), and batteries
- Dissolved oxygen: 0 – 20 mg/L with accuracy of 0.4 mg/L
- Oxygen: 0- 100% with accuracy of 0.5 -0.8 %
- Temperature: 0 – 60 °C with accuracy of ± 0.8 °C
- Salinity: 0-50 ppt

8. Hot plate cum magnetic stirrer

- Safety magnetic stirrer with stirring bar remover, support rod, holder rod, clamps, cable plugs etc

- Timer for the setup: 1 min – 10 hours max
- With two temperature sensors for heat transfer fluid and medium (PT 100)
- With adjustable safety circuits and stirring bar crack detection
- With LCD display
- With microprocessor control
- With Rs 232 PC interface
- With protection cover
- With one stirring position
- Maximum quantity to stir-20 liters
- Speed range: 0-1200 rpm
- Stirring bar length:10-90 mm
- Heating temperature range:20-300 °C
- Connection provision for external temperature sensor
- With the following optional
 - 1 set f magnetic stirrers, 50 set (5 pcs) of round PTFE coated magnetic stirring bars, glass 50 set (5 pcs) of round magnetic stirring bars,
 - 50 set (5 pcs) slide round PTFE coated magnetic stirring bars,
 - 50 set (5 pcs) ellipse PTFE coated magnetic stirring bars,
 - 30 set (5 pcs) of cross PTFE coated magnetic stirring bars,
 - 67 (1pc) beaker PTFE coated magnetic stirring bar
 - With smooth stirring action up to 1500 rpm
 - With epoxy-coated cast aluminum body for durability and stability
 - With inbuilt microprocessor for temperature control and accuracy
 - With over temperature protection system
 - With metering pumps
 - Maximum load: 10 lb
 - Temperature range: 40 – 350 °C

9. Humidity meter

- To measure the humidity and temperature

- With dual LCD display of simultaneous RH and temperature
- Temperature is switchable to °C and °F
- Built in humidity (resistive ceramic) and temperature sensor (thermistor) for convenient operation
- Pocket size for portability
- Min/max for humidity and temperature
- Ability to measure the humidity changes in 5-30 seconds
- Humidity: 10 – 85 % with accuracy of $\pm 1\%$ RH
- Temperature: -10 - 50 °C with accuracy of ± 1 °C

10. Hydrometer

- To measure the specific gravity of the liquids
- With temperature inbuilt sensor
- Specific gravity range: 0.7 – 2
- With temperature standardization of 60 °F/60 °F
- With metal ballast
- With foam and line storage case
- The following set of hydrometers may be provided
 - I. Degree API hydrometer
 - II. Plain form hydrometers
 - III. Degree Baume hydrometers
 - IV. Brix scale hydrometers
 - V. Alcohol hydrometer
 - VI. Soil hydrometers for suspension
 - VII. Salt hydrometer

11. Coriolis flow meter

- To measure mass flow and density of fluids
- Density measurement range: 0.5 to 2 g/cc
- Temperature measuring range: -35 to 150 °C

- Display with 3 line backlit LCD
- Supply with traceable calibration liquid flow meter, 1ccm-320 LPM water
- Accuracy:
 - Liquids: ± 0.1 % flow rate
 - Gases: ± 0.5 % of flow rate
 - Density accuracy: ± 0.002 g/cc

12. Potentiometric titrator

- To determine wide range of parameters quickly reliably and accurately (such as FOS/TAC, salt content, alkalinity, total acidity, chloride in drinking water, and total hardness etc)
- Color graphic display for tracking the titration curve
- High resolution for PH, mV, ISE, redox and photometric titrations with temperature compensation.
- Provision for manual titration
- With exchangeable module of different volumes
- Supply with dosing module (5ml and 20 ml) and magnetic stirrer
- Dead stop measurement with polarizable electrodes
- With linear and dynamic titration to equivalence point
- With computer interface with USB or RS 232 for data login
- pH/mV range: -1950 to 1950 mV
- pH / mV resolution: 01 mV
- Analysis: acid/base, pH measurements
- Control and evolution: end point titration with dynamic and incremental addition of titrant
- With multiple data log points
- Temperature range: 0 -1 30 0C

13. Gas mass flow meter

- For accurate gas flow measurement

- With integrated sensor, valve, controller with data storage to PC
- Superior thru-flow design mass flow sensor
- Should have high accuracy and repeatability
- Gas flow measurements should be unaffected by moderate changes in temperature and pressure
- With display of accumulated mass flow (with LCD digital display)
- Meter should be protected from polarity/short circuit with built in resistable fuse
- Operating temperature: 0-50 °C
- Flow rate: 0-100 L/min
- Maximum operating pressure: 1000 Psi
- Maximum particulate size: 5 microns
- Accuracy: ± 1.5 % full scale
- Repeatability: ± 0.5 % full scale

14. Laboratory mechanical over head stirrer

- Digital laboratory stirrer with direct motor drive for simplest stirring tasks up to 40 liters of liquids
- A setup with telescopic stand, stirrer, shaft protection, couplings and clamps
- With ideal speed range from 50 -1600 rpm
- Should be infinitely adjustable without gear shifting, slim casing, Quiet operation, Safety circuit, Non- locking and over load capabilities
- With analog output of speed and torque
- With push through agitator element
- With two speed ranges for highly viscous range and for intensive mixing
- With maximum viscosity: 50000 mPas
- Torque maximum at stirrer shaft: 900 Ncm
- With the following stirrers

- Propeller stirrer (3 bladed & 4 bladed)
- Dissolved stirrer
- Paddle stirrer
- Anchor stirrer
- Turbine stirrer

15. Orbital shaker

- Laboratory shaker with large surface area and load capacity of up to 15 kg
- Speed control range of 0-300 rpm
- With digital display
- With orbital diameter of 30 mm
- Suitable for all lying vessels
- Should be continuous operation with time setting range of 1 min – 59 minutes
- With reciprocating movement
- With shaker diameter from 25-30mm
- With operating temperature range of 5-50 0C
- With stick max, all suitable cables, fixing clips, fixing clip support and with universal attachment

16. Constant heating bath

- Water and oil heating bath of capacity 3-4 liters made of SS
- With heating output of approximately 1300 Watts
- With adjustable safety circuit for safe switch off in case of errors
- With protection against dry running
- With digital display
- With control of temperature by micro processor
- With operating temperature range of 20-180 0C

17. Centrifuge

- A mini centrifuge for micro filtration and cell separation
- With transparent cover for visualization
- With time setting range of 1 min – 100 minutes
- Operating with closed lid for safety purpose
- With speed of 6000 rpm and with quick start & stop
- Supply with suitable rotors, adaptors and other necessary accessories

18. Automatic Melting point apparatus

- To determine the melting point of samples
- With built in camera which continuously captures images of the samples
- Provision for selecting start and stop temperatures
- With PID temperature controller for linear increase in temperature
- Alarm for temperature stabilization, end of melt, high/low of temperature limits
- With provision for analysis of 3 samples simultaneously
- With RS 232 PC interface for analysis
- Provision for using the instrument as thermometer when not used for melting point by having external RTD input sensor
- With LCD display
- Supply with replacement capillary pack of 300 units
- Temperature range: 0-400 °C
- Accuracy of temperature reading; ± 0.5 °C
- Heat up time: 0.1 -20 °C per minute

19. Moisture content meter

- To measure the moisture content of food and beverages, quality control, environment analysis etc
- With choice of IR or halogen heating and with programmable operation
- With storage capacity of up to 50 tests by interfacing the PC with RS 232 cable

- With weighing capacity of up to 50 grams & with readability of 0.001g
- With LCD display of % moisture, % solids, weight, time, temperature and drying curve
- Temperature range: 40-200 °C
- Timer range: 1 min – 120 min
- Supply with 50 sample pans, fiber pads, in use cover, 6 ft power cord, suitable cables and thermal compact printer

20. Bench top Turbidity meter

- A bench top turbidity meter combined with chlorine and with EPA compliant measurements
- With data storage and built in battery
- With data logging and auto shut off
- With LCD display and RS 232 interface
- Provide with 60 ml each of 0,1 and 10 NTU standard, 100 each of free and total chlorine DPD tablets, sample bottle, sample tubes and all suitable cables & adopters
- Turbidity: 0 -4000 NTU or 0-10,500 ASBC
- Chlorine: 0 – 10 ppm
- Resolution for turbidity: 0.01, 0.1,
- Resolution for chlorine: 0.01 ppm for 0-5 chlorine & 0.1 ppm for 5-10 chlorine
- Accuracy for both turbidity and chlorine: $\pm 2\%$
- Response time: less than 2 seconds

21. Tensio meter

- To measure the surface tension of oils, detergents, colloidal suspensions and chemicals
- Measure both the surface tension and interfacial tension of the liquids
- Color indication for force in upward and downward direction

- Supply with 6cm platinum iridium measuring ring, torsion wires, carrying case and replacement torsion ring for upward/downward direction
- Surface tension: 0 -90 dyne/cm upward/downward direction
- Accuracy: ± 0.05 dyne/cm
- Measuring time: 10 -20 seconds

22.Viscometer

- To measure the viscosity of fluids
- Digital viscometer with continues sensing and data display in LCD
- With RTD sensor for sample temperature monitoring and with control
- Provision for various selectable rotational speed up to 15 numbers
- Supply with viscometer stand, 2 spindles for each model, 5 ft power cord, storage case, spindle rack
- Minimum viscosity: 1 Cps
- Maximum viscosity: 20 Lac Cps
- Speeds: 0.5 – 100 RPM
- With accuracy of $\pm 1\%$ of range and repeatability of $\pm 0.2 \%$

23.Laboratory convection drying oven

- A laboratory drying oven operating form ambient – 250 °C
- With temperature uniformity ± 1 °C and resolution 0.1 °C
- Temperature control by PID controller
- With over temperature protection
- Built in time probe
- Volume capacity of 40-80 L
- Inner chamber should be form corrosion resistant
- With automatic over temperature for protection on limits
- With temperature control and LCD display of temperature

- With 2 shelves and 3 shelf positions
- Supply with suitable accessories like safety gloves if necessary and other cables

24. Vacuum oven

A vacuum oven made of SS inner chamber and electrostatic spraying exterior

With micro computer temperature controller with functions of time and over temperature functions

With digital display and parameter setting keys

Temperature range: ambient to 250 °C

With temperature uniformity ± 1 °C and resolution 0.1 °C

With vacuum degree up to 133 pa

25. Laboratory muffle furnace

- A laboratory muffle furnace for temperature range 50 – 1100 °C
- With vertical lift door which directs heat away from user
- With volume of approximately 500 cu
- With fiber insulation in chamber and fiber brick insulation around heating elements
- With provision for replacing heating elements
- With 3 stages programmable with PID control with 10 programs
- With temperature control accuracy: ± 5 °C
- With rise time: 1 hour
- With temperature uniform at 100 °C = ± 2.5 °C
- With intake power 240 VAC
- Supply with 5ft power cord with 3 prong grounded plug and other suitable like ceramic hearth plate
- With refractory door closing and ventilation
- With digital display and controller up to 1160 °C

26.Laboratory water purification system

- For inorganic and organic trace analysis and HPLC, ICP-MS, TOC analysis
- From tap water to ultrapure system
- With pre treatment filters like RO cartridge, ultra pure polisher cartridge, sterile 0.2 μm filter, pressure regulator, UV lamp and/or UV filter where applicable
- With 30 liter recirculation tank
- With sterile over floe built with 0.2mm sterile tank filter for CO_2 absorption
- Resistivity at ambient: 10-20 $\text{M}\Omega \text{ cm}$
- Conductivity: 0.055 $\mu\text{S/cm}$
- TOC value: 1-5 ppb
- Particles: < 1 $\mu\text{m/mL}$
- Bacterial content: < 1 CFU/ml

27.Pensky Mortens closed cup flash point apparatus

- To determine the flash point of fuels, lubricating oils containing suspended solids and liquids
- With dual flash point detection system (thermal and ionization)
- Provision for operating the setup with gas heating or electrical heating
- Flash point operating range: 0-400 $^{\circ}\text{C}$
- With LCD monitor to display the stirring speed, temperature curve, and current test status
- With alarm for the indication of completion of test
- With PC interface for data analysis
- With automatic barometric correction
- With utility of 230 VAC
- Supply with manual flash point tester stirrer and flash point tester draft shield

28. Optical Tachometer

- To measure RPM and speed
- It should be combination of optical tachometer and stroboscope
- With LCD display
- Range for tachometer: 5- 99, 999 rpm
- Range for stroboscope: 100- 1, 00, 000 fpm
- Measuring distance: 0-12 meters
- With automatic storage of last reading and mini-max readings
- Supply with batteries and roll of reflective tape

29. Gas Chromatography

- Gas chromatograph with capillary and packed column analysis
- With manual sampling injection
- With FID and TCD detector
- With provision for column for mixed polar option
- With built in auto stop and auto start function
- System with built in carrier gas saver function
- With digital setting for all carrier gas parameters with advanced flow controllers to capillary injection parts for excellent retention time with reproducible units
- With dual FID design for excellent baseline stability and column bleed compensation
- With capability of simultaneously mounting up to 3 injection ports and 4 detectors on single GC
- With LCD display for easy setting of GC parameters
- Self diagnostics for self validation of instrument before every sample injection
- Compatibility of accessories like auto injectors and samples, gas sampling valves and methanizer etc
- With PC interface for chromatograph analysis and with data acquisition

- With protection circuit against absence of carrier gas
- With over temperature protection circuit for oven, injector and detector
- With the following general details of FID, TCD, injection and controller functions
- Supply with accessories like liquid injection syringe 5 micro liters, packed column, capillary column,

Dual packed injection unit

- Temperature range: +5 to 400 °C.
- Suitable for Micro, Analytical & Semi-preparative mixing volumes.
- Dynamic gradient mixing with inbuilt membrane filters.
- Carrier gas to be digitally controlled

Column oven

- With temperature range up to 400 °C
- With temperature accuracy: ±1%
- Oven of volume 15-17 Liters
- Temperature program steps up to 20
- Oven cooling time: within 10 minutes & up to minimum of nearly 40 °C

Dual packed injection unit - 2 packed injectors

- Carrier Gas Flow controller with dual Advance Flow Controller.
- Flow rate setting range : 0-100ml/min
- Programmable steps : 7
- Programmable rate setting range: -400 to 400ml/min
- Ability to maintain column flow rate during column oven Heating

Capillary Split / Split less injector: - 1 no.

- Pressure Setting range: 0-970kPa
- Programmable steps: 7
- Programmable rate setting range: -400 to 400kPa/min

- Split ratio setting: 0 – 9999.9
- Total Flow rate Setting range:0-1200ml/min
- Ability to maintain column average linear velocity during column oven heating.

Detectors:

a. Flame Ionization Detector

- Dual FID – for packed and capillary application
- With dual flow rate differential system.
- Temperature range: 400 °C.
- Minimum detection limit: 2pgC/s
- Dynamic Range: 10^7

b. Thermal conductivity detector

- With dual flow rate differential system
- Operating temperature range up to 400 °C
- Sensitivity: 40000 mv., ml/mg
- Dynamic range: 10^5

30.HPLC

- A binary gradient HPLC system with UV visible detector
- With solvent delivery unit
- With automatic rinsing kit peltier cooling facility
- With gradient mixer and UV-Vis detector
- Computer system controller with software
- With rheodyne injection with 20 µL sample loop
- With injector adaptor and Hamilton syringe
- With sample and solvent filtration kit with filter and vacuum pump
- Receiver tray to provide mobile phase bottles
- With suitable C18 column and sonicator of volume 3-5 liters capacity

- With trap to place mobile phase bottles
- Supply with syringe and syringe filter set

Solvent Delivery unit suitable for Micro, Analytical & Semi-Prep flow rates ---2 No's

- High Pressure Independent pumps - 2no's.
- The flow rate of each pump should be set between 0.0001 to 10 ml/min.
- Flow rate accuracy should be $\pm 1\%$ or $\pm 2\mu\text{L}/\text{min}$ whichever is greater.
- Flow rate precision should be less than $\pm 0.06\%$ RSD.
- Pressure setting range should be up to 40 MPa.
- Maintenance kit & Automatic Rinsing kit for seal wash must be supplied.
- It must have a leak sensor as safety feature.
- It should have functions for maintenance and validation which are accessible by a dedicated operation button.

Gradient Mixer

- Mixing volume changeable in 3 steps.(0.5mL, 1.7mL, 2.6mL)
- Suitable for Micro, Analytical & Semi-preparative mixing volumes.
- Dynamic gradient mixing with inbuilt membrane filters.

Manual Injector

- 7725i Rheodyne Injector with 20ul loop & automatic start.
- Injector Mounting Kit
- 25ul Syringe

Detector :

- High Sensitive Uv-VIS Detector
- Wavelength range 190 nm - 700 nm.
- Built-in temperature controlled flow cell - temperature range from 5 °C above room temperature to 50°C.
- Wavelength accuracy ± 1 nm.
- Bandwidth: 8nm.
- Flow cell volume: 12ul with 10mm path length.

- Automatic wavelength validation by using built in Hg lamp.
- Automatic stray light correction.
- Built-in Electronic noise elimination filters

31. UV visible spectrophotometer

- UV- VIS double beam spectrophotometer
- With high resolution of 1.0 nm bandwidth in wavelength range of 190 nm - 1100nm
- Feasibility of expanding with abundant choice of accessories
- Automatic wavelength calibration function
- Stable double beam optical system
- With advanced UV probe software for instrument control and automated data processing
- Computer interfaced with USB with flexible stand alone mode
- Access control through password protection, even in stand-alone mode
- Measurement reliability with low baseline drift and photometric noise
- With built in validation program, diagnostics and security function
- Standard operating modes like spectrum, quantization, kinetics, multi-component, photometric and multi-wavelength photometric

32. Oil fired Steam generator

- Fully automatic oil/gas fired steam generator
- With instant steaming within 3 minutes
- With fully efficient up to 90 %
- Fail safe design
- With user friendly operation
- Provision for choice of fuels like LPG/NG/HSD/diesel etc
- With steam production rate approximately 100 kg/hr
- Steam pressure: 10-15 kgs/cm²
- Supply with suitable accessories

33. Digital Refractometer

- To measure critical angle, refractive index, % solids as Brix over full range
- With single or multiple point calibration
- With IR computer links for data storage and programming by interfacing with PC
- With LCD display
- With automatic temperature compensation and prism temperature sensors for avoiding temperature correction calculations
- Brix range: 0-95 %
- RI: 1.33 – 1.56
- Resolution: 0.1 % for Brix, 0.0001 for RI
- Accuracy: ± 0.1 % for Brix, ± 0.0001 for RI
- Temperature compensation: -12 °C to 45 °C
- Sample volume: 100 micro liters
- Supply with batteries, IR communications package, NIST traceable calibration refractometer

34. Capillary viscometer

- To determine the viscosity of Newtonian liquids
- With viscosity range 2000 – 20000 cSt
- With accuracy of ± 0.2 %
- Supply with calibration data chart and brass viscometer holder

35. Falling ball viscometer

- To measure the viscosity of various fluids using falling ball
- With sample volume 5-10ml
- Measuring range for viscosity is 2-2- cp for glass, 100-1000 for SS and 200 - 2000 for tantalum

- With accuracy of ± 0.2
- Supply the glass, SS and tantalum balls

36. Barometer

- A wall mounting barometer
- With display of pressure and temperature
- With LCD display
- With corrosion resistant
- Pressure range: 945 -1045 mbar (27.9 -30.9" Hg)
- Accuracy: ± 1 mbar or ± 0.03 " hg
- Temperature range: -23 °C to 60 °C
- Supply with wall mounting ring and batteries

37. IR thermometer

- A non contact temperature measurement with 2 point laser sighting
- With pinpoint laser sighting
- With distance target 12:1
- With temperature range: -20 °C to 600 °C
- With built in thermocouple port for direct measurement
- Provision for switchable optics for humidity, temperature and dew point module
- Possibility of low focus and very long distance measurement
- With min/max, high/low, avg audible and visual alarm limits
- With automatic data hold
- Supply with IR gun, PC software, USB cable, tripod mounting bracket, carry case, wrist strap, batteries, thermocouple surface probe and thermal printer

38. Pocket thermometers

- For measuring temperature in field, lab and process
- With response time within 10-20 seconds for new 99% reading
- With digital display

- Temperature range of -20 °C to 230 °C with accuracy ± 1 °C
- With digital display and switchable option to °F and °C
- Supply with protective case, batteries with the following types of thermometers
 - a. Water resistant thermometer
 - b. Long stem thermometer (8" long)
 - c. Rotating display thermometer
 - d. Pen style thermometer
 - e. Potentiometer thermometer

39. Differential pressure manometers

- To measure the static pressure and differential pressure
- With operating temperature range 0 -50 °C
- Maximum pressure with well type: 250 Psi
- Maximum pressure with inclined: 100 Psi
- Maximum pressure with slack tube: 50 Psi
- Supply with suitable magnetic mounting clips, connectors, filling fluid bottles
- Supply the following types of manometers
 - a. Well type table mount manometer
 - b. Inclined stationary manometer
 - c. Portable slack tube manometer

40. Digital manometer

- To read gauge and differential pressure in various units
- With large LDC display
- With max/min/hold and auto power off functions
- With built in RS 232 cable port for PC interface
- With units of display psi, " H₂O, kPa, ft H₂O, " Hg, cm H₂O, mbar, bar, mm Hg, oz inch², kg cm
- With pressure range 0-100 psi and resolution 0.1 psi

- Supply with connection hose, batteries, carrying case, adapter, cables and software

41. Pressure gauges

a. Low pressure mechanical gauge

- With effective low pressure and low vacuum response with diaphragm
- With true zero indication
- With built in snubber to minimize rapid pressure fluctuations
- With process connection $\frac{1}{4}$ " NPT (M)
- Accuracy: ± 1 % on full scale
- Operating temperature: -45 °C to 130 °C
- Dial size: $2 \frac{1}{2}$ " (64 mm)
- With polycarbonate lens

b. Dual scale glycerin filled pressure gauge

- With glycerin filled
- With process connection $\frac{1}{8}$ " NPT (M)
- With accuracy: ± 1.5 % on full scale
- Operating temperature: 0 - 120 °C
- With polycarbonate lens

c. Digital pressure gauges

- With stainless steel sensor and 9 engineering units
- With ± 0.5 % accuracy
- With digital display
- With calibration of great values such as zero and span
- Should be chemical resistant
- Operating temperature: -10 – 70 °C
- Supply the gauges with 0 - 30 psi and 0 - 500 psi and 0 - 5000 psi

42. Digital MultiMeter

- To measure the voltage and the capacitance
- Automatic MultiMeter with temperature + voltage detector
- Non contact voltage detection
- High contrast LCD display
- Double molded housing
- With test leads, type K bead wire probe
- Auto ranging 4000 counts with accuracy of 0.5 %
- NC voltage detector: 100 – 600 VAC
- DC & AC voltage: 600 V
- DC & AC current: 10 A
- Resistance: 40 M Ω
- Capacitance: 100 μ F

43. Power meter

- To measure true power, apparent power and power factor, voltage, current, watts, frequency, phase angle and resistance
- With built in data logger
- With LCD display, recall min/max readings
- Voltage range: up to 600 V
- DC and AC current range: up to 1000 A
- Frequency range: up to 500 Hz
- Phase angle range: -90 to +90°

44.7 thermocouple dual input data logger with alarm

- Seven thermocouples type selections: K, J, T, E, E, S and N
- Large backlit LCD with two secondary displays
- Simultaneous display of temperature T1 and T2
- Adjustment of °C/°F units

- Data hold and relative functions with mini/max/average and hold up functions
- Built in RS 232 PC interface
- Supply with surface temperature RTD probe, thermistor probe, general purpose type K and type J –probe

45.PSA dehumidifier

- PSA- dehumidification units of optimal humidity to create a sense of well-being and to save energy via heat recovery.
- It should Includes room hygostat to determine humidity, environmentally friendly refrigerant and a very quiet scroll compressor
- With capacity of 500 m³/h
- To the level of performance up to 30 °C and a relative humidity of 70%
- With regeneration facility

46.Rotameters

- a. Acrylic plastic rotameter

Temperature Rating: 50 °C Max

Pressure Rating: 10 Kg/cm² Max

Accuracy: +/- 2% Full Scale Range

- b. Glass tube rotameter

Accuracy : +/- 2% Full Scale Range

Mounting : Vertical with Bottom inlet i.e Mounting In Upward Vertical Flow line

MOC : M-S / 304 S.S / 316 S.S / P.P / PVC / PTFE or as required

- c. Low flow glass tube rotameter

accuracy : +/- 2% Full Scale Range

Casing : Aluminum Casing from 3 sides and clear acrylic front

Mounting : Wall Mounting, Front of Panel Mounting with help of screwed mounting lugs, Direct Mounting.

d. Digital magnetic rotameter

Accuracy : +/- 2% of Full Scale Range. Range Ability : 10 : 1

Temperature Rating : -50 to 120 ° C

Pressure Rating : 70 Kg/cm²

Enclosure : Flameproof/Weatherproof

Power Supply : 9 VDC Battery

47. Accumax Micro pipettes

Supply the Accumax Pro and Accumax multichannel pipette

48. Analytical weighing balance

- Supply the analytical weighing balance with accuracy 0.01 mg and with weighing capacity of up to 2000g.
- Also supply the analytical weighing balance with accuracy 0.1mg and with weighing capacity up to 5000g
- Also supply the analytical weighing balance with accuracy 1g and with weighing capacity up to 10Kg

Financial Bid

Price Schedule for Goods offered

Please quote amounts in numerals and words at each place.

Sl. No.	Instrument Name	Total quantity	Unit Price (In Rs) Without Taxes & Duties	Taxes & Duties on Unit Price	Unit Price (In Rs) With Taxes and Duties T(4+5)	Total Price (In Rs) (3*6)
1	2	3	4	5	6	7
1	Hydro thermo anemometer	6				
2	Bomb calorimeter	3				
3	Indoor air quality meter	3				
4	Bench top conductivity meter	3				
5	Bench top PH meter	3				
6	Vacuum desiccators	6				
7	Dissolved oxygen meter kit	3				
8	Hot plate cum Magnetic stirrer	3				
9	Humidity meter	6				
10	Hydrometer	6				
11	Coriolis flow meter	3				
12	Potentiometric titrator	3				
13	Gas mass flow meter	3				
14	Overhead stirrer	6				
15	Orbital shaker	3				
16	Constant heating bath	6				
17	Centrifuge	9				
18	Melting point apparatus	3				
19	Moisture analyzer	3				
20	Bench top turbidity meter	3				
21	Tensio meter	3				
22	Viscometer	3				
23	Convection drying oven	3				
24	Vacuum Oven	3				
25	Muffle furnace	3				
26	Lab water purification system	3				
27	Pensky Mortens closed cup Flash point apparatus	3				

28	Optical Tachometer	6				
29	GC with FID and TCD	3				
30	HPLC	3				
31	UV Vis spectrophotometer	3				
32	Oil fired Steam generator	3				
33	Digital Refractometer	3				
34	Capillary viscometer	9				
35	Falling ball viscometer	9				
36	Barometer	3				
37	IR Thermometer	3				
38	Glass thermometer	6				
39	Differential Manometer	9				
40	Digital manometer	6				
41	Pressure gauges	6				
42	Digital Multimeter	9				
43	Power meter	6				
44	Thermocouple module	3				
45	PSA dehumidifier	3				
46	Rota meters	6				
47	Accumax micro pipette	6				
48	Analytical Weighing balances	3				

(Signature of Bidder)

ANNEXURE-1

RGUKT. Ref. No: RGUKT/Proc/Ch.Engg/ALI /T10/E-2013

Bid Security(EMD) form

(To be issued by a Nationalized Bank in India and having at least one branch in Hyderabad)

Whereas.....(here in after called “ the Bidder”) has submitted its bid
Dated.....(Date). For the execution of(here in after called “the Bid”)

KNOW ALL MEN By these present that WE.....ofhaving our

Registered office at(hereinafter called the “Bank”) are bound unto
the Rajiv Gandhi University of Knowledge Technologies,. (hereinafter called “The RGUKT”) in
the sum offor which payment well and truly to be made to the said RGUKT itself,
its successors and assignees by these presents.

The conditions of these obligations are:

1. If the bidder withdraws its bid during the period of bid validity or
2. If the bidder, having been notified of the acceptance of its bid by the RGUKT during the period of bid validity
 - 1) Fails or refuses to execute the contract form if required; or
 - 2) Fails or refuses to furnish the performance security, in accordance with the bid requirement;

We undertake to pay the RGUKT up to the above amount upon receipt of its first written demand, without the RGUKT having to substantiate its demand, provided that in its demand the RGUKT will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including 45 days after the period of the bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

Place:

Signature of the Bank

Date:

and seal.

ANNEXURE-II

RGUKT Ref. No... *RGUKT/Proc/Ch.Engg/ALI /T10/E-2013*

PERFORMANCE SECURITY FORM

(To be issued by a Nationalized Bank in India and having at least one branch in Hyderabad)

To :.....(Address of RGUKT)

WHEREAS..... (Name of Vendor) hereinafter called “the Vendor” has undertaken, in pursuance of

Contract No.....Dated,.....(Date), to supply.....called “the Contract” AND WHEREAS it has been stipulated by you in the said Contract, that the Vendor shall furnish you with a Bank guarantee by a Nationalized bank for the sum specified therein as security for compliance with the supplier’s performance Obligations in accordance with the Contract.

WHEREAS we have agreed to give the Vendor a Guarantee:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Vendor, up to a total of Rs.....and we undertake to pay you, upon your first written demand declaring the Vendor to be in default under Rs..... (Amount of Guarantee) as aforesaid without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until theday of (Date)

Place:

Signature of Guarantors and Seal

Date:

ANNEXURE-III

SUPPLY AGREEMENT FORM

THIS AGREEMENT made the day of..... (Year).Between the Rajiv Gandhi University of Knowledge Technologies (hereinafter “the RGUKT”) of one part and..... (Name of Vendor) of..... (City and Country of Vendor) (Hereinafter “the Vendor”) of the other part:

WHEREAS the RGUKT is desirous that certain items as described in the bid document and briefly outlined below, should be provided by the Vendor.

Date of tender call:

Title of the project:

Brief outline of the work:

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

In this agreement words and expression shall have the same meanings as are respectively assigned to them in the bid document referred to.

The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.

1. bid documents
2. clarifications issued by RGUKT if any,
3. RGUKT notification of award.

In consideration of the payments to be made by the RGUKT to the Vendor as hereinafter mentioned, the Vendor hereby covenants with the RGUKT to provide the **items and to replace defective items during the warranty period** therein in conformity, in all respects, with the provisions of the contract.

The RGUKT hereby covenants to pay the Vendor in consideration of the provision of the items and **to replace defective items during the warranty period** therein, the contract price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

Brief particulars of the items which shall be provided by the Vendor are as under:

Items	Quantity	Unit price (Inclusive of all taxes and duties)	Total Amount	Remarks

The Bidder further notes and accepts that:-

- Bidder shall deliver the goods in one single lot within 120 days from the date of award of the contract.

Payment terms	
On delivery at user site	<p>Payment for goods and services shall be made in Indian rupees as follows.</p> <ol style="list-style-type: none"> 1. 80% of payment will be paid after installation, and demonstrating of satisfactory functioning on site. 2. Balance 20% will be paid after 3 months after obtaining the satisfactory certificate from the Director, RGUKT IIIT. 3. In case of equipment from foreign country LC will be opened for 100% and 90% of payment will be paid on delivery & submission of documents and remaining 10% will be paid after installation and commission.
Maximum Damages for late deliveries	<p>Liquidated for late deliveries</p> <p>For delays:- If the supplier fails to deliver any or all of the goods or perform the services within the time period specified in the contract the purchaser shall without prejudice to its other remedies under the contract deduct from the contract price as liquidated damages a sum equivalent to 0.25% of the contract value per day until actual delivery or performance up to a maximum deduction of 10% of the delayed goods or services contract price. Once the maximum deduction is reached, the purchaser may consider the termination of the contract duly forfeiting the performance security etc.,</p>

In addition if the contract is cancelled, the performance security will be en-cashed and forfeited.

- In case, after random sampling of the supplied lot, it is found that there is any non conformance to specifications, the performance guarantee will be en-cashed and forfeited and the bidder will have no claim to any payments. The entire lot will be rejected.
- The supply and distribution of Items supplied shall be done at all the three RGUKT campuses located at
 - Basara, Adilabad District
 - Nuzvid, Krishna District
 - R K Valley (Idupulapaya), Kadapa District
- There shall be a warranty period of 3 years and within the warranty period, in case of any damage to the supplied material like breakage, wear and tear, Electrical defects etc., it will be the responsibility of the supplier to made working the damaged material.
- A random sample of any size will be picked from the lot of items delivered by the bidder to the three IITs under the RGUKT. This sample will be subjected to tests, if necessary at labs anywhere in the country to ensure compliance to specifications. If the result indicates non conformance, the entire lot will be rejected and the contract will stand cancelled without any liability on the part of RGUKT. In addition, this event shall lead to the forfeiture of the performance security amount.
 - All disputes and differences of any kind whatsoever arising out or in connection with contract, whether during or after completion of contract will be settled amicably in a spirit of co – operation and the RGUKT decision shall be final on all such matters and shall be binding on the bidder.

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

Signed, and delivered by

Signed, and delivered by

For the Vendor.

For. Rajiv Gandhi University

Vendor's common seal:

of Knowledge Technologies

Place

RGUKT common seal:

Date:

Place:

Date:

In the presence of:.....

BID LETTER FORM

From:

(Registered name and address of the bidder)

To

Rajiv Gandhi University of Knowledge Technologies,

Ground floor, Vindhya C4 Building,

IIT-H Campuses, Gachibowli,

Hyderabad-500032.

Sir,

Having examined the bidding documents and amendments there on, we the undersigned, offer to supply and deliver the Analytical and Laboratory Instruments (and other related materials) as the case may be, in conformity with the terms and conditions of the bidding document and amendments thereon in response to your tender call dated.....

We undertake to supply the above mentioned materials, as assigned to us in conformity with the said bidding documents, for an estimated sum of Rs (Total bid amount in words and figures) which may vary in accordance with the schedule of prices attached herewith and coverage options made by RGUKT or its user organization.

If our bid is accepted, we undertake to:

- a. supply the materials according to the time schedule specified in the bid document,
- b. Obtain the performance guarantee from a scheduled bank in accordance with bid requirements for the due performance of the contract, and
- c. Agree to abide by the bid conditions, which remain binding upon us during the entire bid validity period and the bid may be accepted any time before the expiration of that period.
- d. We understand that you are not bound to accept the lowest or any bid you may receive, nor to give any reason for the rejection of any bid, and that you will not defray any expenses incurred by us in bidding.

Place:

Bidder's Signature

Date:

Seal.

BIDDER INFORMATION

1	Name of the organization	
2	Year of establishment	
3	Registered Office Address	
4	Phone No.	
5	Fax No.	
6	Email	
7	Total No. of branch offices in AP	
8	Whether Manufacturer	Yes/No
9	Details of EMD furnished	
10	Details of certificates enclosed.	

Turn over details of item/product – 2012-13

S.No	Item name	Nos. sold	Amount (Rs in Lakhs)

List of Major Customers – 2012-13

S. No	Customer Full Address	Year of supply	Item Name	Turn Over (Rs. in Lakhs)

CHECK LIST

Important:

The Bidder must ensure that the following details in the check list are furnished along with the bid document. The bidder must also carefully go through all the contents of the BID Document and any additional information/documents, required more than the items listed in the check list below, also shall have to be furnished. Non-furnishing of any required information/document as per the Tender Document will lead to rejection of the bid.

S.NO	PARTICULARS	PAGE NUMBER
1	BIDDER INFORMATION	
2	TENDER PROCESSING FEE OF RS.1000/- BY WAY OF DD FROM ANY NATIONALIZED BANK	
3	EMD (DD/BG) FROM A NATIONALIZED BANK	
4	PROOF OF HAVING SUPPLIED MATERIALS DURING THE FY12-13	
5	CERTIFICATES ISSUED BY THE FIRM OF CAS REGARDING TURNOVER OF THE SUBJECT MATERIAL	
6	COPY OF ISO CERTIFICATION	
7	SATISFACTORY PERFORMANCE CERTIFICATE FROM PARTIES	
8	CONSTITUTION/LEGAL STATUS OF THE FIRM	
9	COPY OF REGISTRATION CERTIFICATE	
10	LATEST INCOME TAX RETURNS FILED	
11	VAT/CST REGISTRATION	
12	LATEST VAT/CST RETURNS	
13	POWER OF ATTORNEY, WHEREEVER APPLICABLE	

14	LIST OF MACNINERY/EQUIPMENT OF THE BIDDER	
15	NUMBER OF EMPLOYEES	
16	LIST OF CUSTOMERS OF PREVIOUS SUPPLY OF SIMILAR/ SAME ITEMS TO IITS, NIT'S OR CENTRAL UNIVERSITIES OR ANY ACADEMIC INSTITUTE OF NATIONAL REPUTE INSTITUTIONS	
17	LIST OF SERVICING FACILITY CENTERS OR WORK SHOP WITH IN INDIA	
18	LIST OF PRESENT CLIENTELE WITH CONTACT ADDRESSES & TELEPHONE NUMBERS	
19	THE HARD COPIES OF ALL UPLOADED TECHINACAL BID DOCUMENTS SHOULD BE ATTESTED BY THE GAZETTED OFFICER AND COUNTER SIGN BY BIDDER WITH SEAL	
20	ALL OTHER INFORMATION/DOCUMENTS THAT ARE REQUIRED IN BID DOCUMENTS	

NOTE: All pages of the bid documents must be serially numbered and signed.