जम्मू केंद्रीय विश्वविद्यालय
CENTRAL UNIVERSITY OF JAMMU

Bagla (Rahya-Suchani), District **Samba**-181143, **Jammu** (J&K)

Notice Inviting Tender : Open Tender

No. CUJ/EDP&PB-IV/F.14/T.N.01/2015-16

Sealed tenders are invited from reputed firms / original manufacturers of repute and their authorised dealers to supply and install equipments / instruments [**Environmental Chamber, Orbital Incubator Shaker, Refrigerator Cooling centrifuge, Deep freezer (Vertical), Automatic Weather Station, PM10/PM2.5 Air Sampler with Gaseous attachment & accessories** (*Fine Particulate Air Sampler*), **High Volume Air Sampler, Double Beam UV-Visible Spectrophotometer, COD digester, Vacuum Pump Oil free, Muffle Furnace, Vortex mixture, Bomb Calorimeter, Colony Counter, Distillation Unit, Computer with specific configuration for remote sensing and GIS Operations, GPS Receiver Sporting a barometer Altimeter, Tissue Homogenizer, Digital camera, Video camera, Digital water testing kit and Environmental Pollution Analyzer (Continuous on line Air Quality Monitoring Equipment)** for the Dept. of Environmental Sciences for the Central University of Jammu having valid registration certificate, quality certificate, registered with sale tax authority to manufacture and supply of equipments. The detailed tender form can be had from the University through D.D. of **Rs. 1,000/-** drawn in favour of Central University of Jammu payable at Jammu or log on to **www.cujammu.ac.in**.

Last date for receipt of tender	:	**05.08.2015** by **3:00 p.m.**
Date of opening of technical bid	:	**05.08.2015** at **3:30 p.m.**

Registrar

As per GFR, the closing date of the open tender should be after 21 days from the date of paper notification, accordingly the dates will be adjusted. The open tender may be notified at national level in three daily national papers (Indian Express / Times of India, Excelsior & Amar Ujala or any other reputed paper) and ITJ.

13/7/15
Assistant

13/07/15
Deputy Registrar
(EDP&PB)

Registrar
13/7/15

जम्मू केंद्रीय विश्वविद्यालय

Central University of Jammu

Bagla (Rahya-Suchani), District **Samba**–181143, **Jammu** (J&K)
Ph: 01923–249 657 & Website: www.cujammu.ac.in

No: CUJ/EDP&PB-IV/F.14/T. No.01/2015-16/ Date: 13th July 2015

Cost of tender documents: Rs. 1,000/-

Issued to: **M/s.**

TENDER DOCUMENTS CUM RATE CONTRACT AND REGISTRATION OF FIRMS TO SUPLY AND INSTALLATION OF EQUIPMENTS / INSTRUMENTS FOR THE DEPARTMENT OF ENVIRONMENTAL SCIENCES

Last date and time to submit the bids	:	**05.08.2015 by 03.00 p.m.**
Date and time of opening of bids at University Campus, Bagla (Rahya-Suchani), District **Samba**-181143, **Jammu** (J&K), Tel: 01923 – 249657	:	**05.08.2015 by 03.30 p.m.**

Chapter-I: Instructions to the bidders

1. **Preface:** The Central University of Jammu is presently functioning from two campuses, Administrative Block at Bagla (Rahya-Suchani), District Samba, Jammu and Temporary Academic Block & Hostels at Sainik Colony, Jammu. The University intends to purchase equipments / instruments for the Department of Environmental Sciences from OEM / authorized dealers for the University, likely to be installed at both the campuses.

2. **Submission of tender:** The sealed tenders are invited for supply and installation of equipments for the Department of Environmental Sciences under **two bid system** viz. **Technical bid:** consisting of all technical details along with commercial terms and conditions *[filled in Annexure-I duly signed and stamp, EMD, relevant technical documents & D.D. of Rs.1,000/- (if downloaded tender form is used)]* and **Financial bid** [*indicating item wise price for the items motioned in the technical bid (Annexure-II)],* in two separate sealed envelopes and should be super scribed as technical and financial bids accordingly. Both the sealed envelopes should be kept in a third envelope on which it should be super scribed **'Tender for equipments of Dept. of EVS'**.

3. **Quotation of equipments / instruments:** The vender may quote for all equipments/ instruments or part of it as mentioned at Annexure-I and should agree to accept the part supply order as per the criteria of lowest quoted bid for each item. Unit prices are to be quoted both in figures and in words. In case of a discrepancy, that quoted in words / least will be taken as valid.

4. **Opening of bids:** Initially the technical bids will be opened and scrutinize. The firm, who meets the basic requirement as per documents furnished, may be invited for full fledge display / demonstration / to present the samples before opening of financial bid. The University will not bear any cost for presentation of samples. The committee of the University will inspect the samples, may visit the show room / items supplied at other organizations to ascertain the quality. The University may shortlist three to four best quality firms. The financial bid will be opened for those firms who qualify technically and whose sample has been agreed up to the satisfaction level of the University. The decision of the University will be final in this regard.

5. **Selection of firm:** The firm will be selected among the shortlisted firm only and the equipments / instruments will be considered on lowest quoted basis item wise. Further, if the committee found that the quality of lowest quoted firm is not satisfactory, the committee may recommend and consider to the next lowest quoted firm. The decision of the committee will be final in this regards. The short listed tender along with the documents will be submitted to the competent authority and upon approval, the successful bidders will be placed purchase order.

6. **Alter in the bid:** The bidder will not be permitted to alter or modify their bids after receipt by the University; however, the firm can withdraw the bid before the closing last date and time of the tender.

7. **Availability and submission of tender form:** The tender documents can be obtained in person from Estate Office, Bagla (Rahya-Suchani), District Samba–181143, Jammu (J&K) (Tel: 01923–249657) on payment of **Rs. 1,000/-** through DD favouring "*Central University of Jammu*" payable at Jammu during working hours (10:00 to 17:00 hrs). The tender form can be downloaded from University website (www.cujammu.ac.in) and to submit along with the cost of tender form of Rs. 1,000/- and EMD. The downloaded tender form without cost of tender form will not be accepted. Last date to submit the tender is **05.08.2015** by **3:00 p.m.** The filled in tender form can be dropped in tender box at the above address or can be sent through post. The

bids will be opened on the same day in presence of the bidders at **3:30 p.m.** or any other date convenient to the University authorities, which shall be intimated separately. Hence, the firm should write their phone numbers and email ID on outside the sealed envelope to pass the information, if required.

8. **Registration:** The firm should be registered with the competent authority to manufacture and supply of equipments / instruments, sales tax and service tax and also furnish self attested copies of the following documents:

(a) Certificate of registration with competent authorities to manufacture and supply of equipments / instruments

(b) Valid registration with sale tax and service tax authority

(c) TIN / PAN

(d) Valid quality certificate from competent authority (i.e. ISO, ISI etc).

(e) Service tax clearance certificate for the period ending 31.03.2015

(f) Experience certificate

(g) Annual turnover with CA audited balance sheet for last three financial years (2012-13, 2013-14 & 2014-15)

9. All the columns in financial bid are to be filled in words and figures. The variation in words and figures, if any, the lowest shall be taken into account.

10. In case the successful bidder declines the offer of contract, for whatsoever reason(s), his EMD will be forfeited.

11. The University reserves the right to reject all or any tender in whole, or in part, without assigning any reason thereof.

12. **Cost:** The rates quoted should be inclusive of all taxes, levies, freight, insurance, transportation, installation including accessories etc at the destination. Rates and make of the equipments are to be quoted in the financial bid as per tender document (Annexure-II), else it may not be considered. All the above stated elements of taxes and others are required to be shown separately and distinctly.

13. **Office:** The firm should have its office / authorized dealer / workshop / representative within Municipal limit of Jammu / Samba to provide service after sale and to furnish the addresses of service centre with telephone number along with technical bid. The firm does not have authorized office / service centre at Jammu will be required to arrange the service / repair after sale and furnish the certificate to this effect.

14. **Supply:** The firm selected will be required to supply the equipments within the four weeks from the date of issue of purchase order.

15. **Validity of quotation:** All entries in the tender form should be legible and filled clearly. Any overwriting or cutting which is unavoidable shall be signed by the authorized signatory. The bid shall be valid for 90 (ninety) days from the date of opening.

16. Taxes deduction at source as per provision will be made by the University.

Chapter–II: Terms and conditions

17. In case the firm fail to supply the desired specification of equipments as per terms and conditions, the University reserves the right to place the order to the next higher bidder or outside agency and the difference of price will be recovered from the defaulter agency who has been awarded the initial order and this will be binding on the bidder.

18. The University does not pledge himself to accept the lowest quoted or any tender and reserve the right to accept the whole or any part of the tender or portion of the quantity offered and bidders shall supply the same / execute the order at the rate quoted by them.

19. **Rejection of tender:** The conditional tender, incomplete in any form, unfilled / unsigned bids, without required documents, EMD and cost of tender form (if downloaded form is used) shall not be accepted and on such bids any query / intimation will not be entertained. The tender documents are not transferable.

20. The committee may consider any bid, if feels that inadvertently certain required documents are not enclosed by the firm and the firm promises that the required documents obtained before the closing date of the tender will be furnished within stipulated time. The decision of the committee will be final in this regards.

21. **Specification:** The desired specifications and allied technical details are placed at Annexure-I, if required the same may be amended / up graded at the time of placing purchase order without increase in the quoted price. These are basic specifications; the firm may quote the same or higher specification as per enclosed annexure format only, without changing the specification and serial number. The committee may amend the specification and their decision will be final in this regard.

22. **Bid security / EMD:** The filled in tender form without requisite security bid / EMD and cost of tender form Rs. 1,000/- (*if the downloaded tender form is used*) will not be considered. Both the DD are to be drawn separately favouring "Central University of Jammu" payable at Jammu. The security bid of unsuccessful bidders will be return without interest after finalization of the tender. The security bid of the successful bidder will be converted into security deposit and will be returned without interest after successful completion of warranty period / after submission of bank guarantee / supply of equipments. Further, in case any firm is L-1 in some of the items, than the firm will be required to deposit the bid security / EMD amount equal to 10% amount of purchase order and the full bid security / EMD amount will be returned without interest. The security bid / EMD amount is as follows:

SN	Equipment / Instruments	Quantity	EMD amount of each item
01	Environmental Chamber	01	5,000
02	Orbital Incubator Shaker	01	1,500
03	Refrigerator Cooling centrifuge	01	8,000
04	Deep freezer (Vertical)	01	4,000
05	Automatic Weather Station	01	10,000
06	PM10/PM2.5 Air Sampler with Gaseous attachment & accessories (Fine Particulate Air Sampler)	06	25,000
07	High Volume Air Sampler	01	6,000
08	Double Beam UV-Visible Spectrophotometer	01	16,000

09	COD digester	01	1,500
10	Vacuum Pump Oil free	01	500
11	Muffle Furnace	01	1,500
12	Vortex mixture	01	500
13	Bomb Calorimeter	01	2,000
14	Colony Counter	01	500
15	Distillation Unit	01	1,000
16	Computer with specific configuration for remote sensing and GIS Operations	01	2,000
17	GPS Receiver Sporting a barometer Altimeter	01	1,000
18	Tissue Homogenizer	01	500
19	Digital camera	01	1,500
20	Video camera	01	3,000
21	Environmental Pollution Analyzer (Continuous on line Air Quality Monitoring Equipment)	01	70,000
22	Digital water testing kit	02	10,000

The EMD is to be added in respect of number the equipments / instruments quoted.

23. **Company profile:** The bidders must submit their company profile and to mention their make of the equipments which will be supplied. A list of organizations / agencies to which furniture has been supplied may be furnished along with copies of supply order, with the technical bid.

24. **Experience:** Bidder should be original manufacturer / authorise dealer and should have minimum two years of experience in supply of similar equipments to Govt. / semi Govt. / PSU / reputed organisation. A certified copy of the same should be attached with the technical bid.

25. **Warranty:** All the equipments should be with onsite comprehensive warranty for minimum period of one years (or as per OEM warranty period, whichever is later) after satisfactory installation and agreed by the University. The firm should repair / replace the faulty items free of cost during the warranty period.

26. **Payment terms:** No advance payment will be considered. The payment will be release in Indian rupees in the following orders:

(i) **90% payment of purchase order:** After 100% supply of equipments, subject to certification by the University.

(ii) **10% payment of purchase order / security deposit:** After availing the warranty period plus one month or on receipt of Bank Guarantee of any nationalized bank of equal amount for a period of warranty plus one month.

(iii) The purchase order may be placed in phase manner and the payment may be considered phase wise.

27. **Quantity:** The quantity mentioned in the tender document can increase or decrease without changing the quoted price at the discretion of the University and the decision of the University shall be final in all respect. This is a tender cum rate contract and registration of suppliers initially for a period of one year and the item offered in the tender can be re-ordered at the same rate, terms & conditions within a period of twelve (12) months extendable by next year mutually agreed by both the parties.

28. **Management services:** The firm would be required to provide the management / consultation services etc. in respect of the equipments to establish any labs / hall, free of cost as and when required. The firm would provide consultancy to CUJ on Products & technologies that would provide more efficiency in working. The firm should also share best practices adopted in the industry free of cost.

29. **Rights of the University:** The University reserves all the rights to reject or accept any tender without assigning any reason or cancel or withdraw the tender notice in part of full. The University reserves the right to accept or reject any bid, and to annual the bidding process and reject all bids at any time, without thereby incurring any liability to the affected bidder or bidders of the ground for such action.

30. Late submission of tenders shall not be accepted. If the tenders are sent by post / courier, it should be ensured that cover should be intact at the time of reaching destination without any damage or loss. The University is not responsible for any delay on account of postal / courier services.

31. **Acceptance of terms and conditions:** The bidder shall sign and stamp each page of this tender document and all other enclosures appended to it as a token of having read and understood the terms and conditions contained therein and submit the same along with the bid. The bidder would fill up the information in the Annexure enclosed at the end of this document at Chapter–III in clear and legible terms. Annexure shall also have to be signed and stamped by the bidder or its authorized signatory.

32. **Termination of contract:** If supply of equipments / instruments is not found satisfactory, the purchase order will be canceled by the University at any stage. The University reserves the right to decrease or increase the quantity at the time of placing the work order; the firm will undertake the same at the quoted rates.

33. The firm should attend all the calls in respects of the fault, efforts should be made to rectify the major fault within 48 hours. The firm is to provide one single point of contact for effective communication to book the fault for users to seek timely support.

34. The University may procure certain equipments offered under DGS&D rate contract, the firm may quote for both DGS&D and Non DGS&D rates, if available. The University will procure the equipments on lowest quoted (L-1) basis from the shortlisted firms on item wise and the firm can quote for any items or all the items, the University decision will be final in this regard. If the University procures certain items under DGS&D rate contract, the firm will be required to set / configure the supplied equipments technically on other equipments.

35. **Penalty clause:** The supply and installation of equipments / instruments has to be completed within stipulated time period, in case of delay and the University is not satisfied with the stated reason, the University reserves the right to impose the penalty equivalent to 0.5% per week of the value of undelivered goods or unperformed services limited to a maximum of 10% value of the purchase order / left over cost. Once the maximum is reached, the University may consider termination of the contract / order without any notice and further serious action may be initiated.

36. **Settlement of dispute:** In case of any dispute, University Headquarter (Samba) will be the jurisdiction and the Registrar, Central University of Jammu, shall decide the issue and his decision will be final and shall be the binding on both the parties.

37. In case of any disagreement or dispute between the first party (i.e. Central University of Jammu) and the second party (i.e. agency) arising out of or due to the terms and conditions of contact agreement, the Central University of Jammu shall have the discretion for settlement of such disputes by appointing a sole arbitrator and the award so made by the arbitrator shall be final and binding on both the parties. Jurisdiction shall be Jammu courts only, for any dispute.

Registrar 13/7/15

Place: Samba (J&K)
Date: 13th July 2015

Central University of Jammu,
Jammu

Encl: i) Annexure-I : Technical bid (7 pages)
ii) Annexure-II : Financial bid (8 pages)

Chapter–III: Technical bid (Items with specification)**:** To be filled by the firm and to submit to CUJ along with the technical bid.

Sl. No	Specification	Qty. Req. (Approx)	Make & model	Agreed by firm (Yes/ No), If yes, Sl. No. of technical broacher/details enclosed)	EMD (DD No. & date)
1	**Environment Chamber:** Outer chamber made of CRC sheet duly powder coated, Inner chamber made of stainless steel, Tray made of stainless steel Temperature: 10^0C to 60^0C controlled through microprocessor based digital temperature indicator cum controller Humidity: 40% to 95% RH, controlled through a digital humidity indicator cum controller Capacity: 171 lts, Volume: 6.1 cuft, No. of shelves: 2 Display: Microprocessor digital controller with LED display	01			5,000
2.	**Orbital Incubator Shaker:** 175 litre (16x 500ml) Temperature range: 5°C to 80°C, Accuracy: ± 0.5 °C RPM: 25-300 RPM continuously variable & settable Platform to accommodate interchangeable clams of different size of flasks (100ml x40, 150 ml x 34,250 ml x23, 500ml x16, 1000 ml x9) Chamber illumination with fluorescent lamp Timer 0-24 hours day night cycle Microprocessor PID digital temperature indicator cum controller Digital display for temp and speed Automatic restart at preset speed in case of power failure	01			1,500
3.	**Refrigerated Cooling centrifuge :** Max speed: 17,500 rpm; Max RCF: more than 30000*g Speed / RCF Increment in steps of 1,100 Temperature range: - 10^o to + 40^o C Maintenance free, noiseless, brushless motor drive. Large size display screen of set & run parameters i.e. speed, rcf, temperature, time, rotor number Self diagnostic error messages Short run facility with programmable preset speed & display run time in seconds Automatic magnetic rotors from over speeding 2 linear accell & decell curves for soft start/ soft stop facility to avoid mixing of sedimentation time increment in 1 or 10 sec. Double lid locks for additional safety, selectable auto lid opening. 50 programs memory and Stabilizer Rotors: Fixed Angle Rotor for 24 X 1.5/2.0ml with more than 30000*g Fixed Angle Rotor for 6 X 15/50ml with more than 7000*g	01			8,000
4.	**Deep Freezer (vertical):** Outer chamber made of CRC sheet duly powder coated, Inner chamber made of stainless steel, Space between inner and outer wall fitted with foamed in place of PUF insulation Temperature: ambient to -40°C, Volume:6 cuft, Capacity:171 ltr	01			4,000
5.	**Automatic Weather station :** Sensors for recording parameters: i. Anemometer sensor with brass cups and nuts for recording wind speed. ii. Wind vane (brass) sensor for recording wind direction. iii. Air temperature sensor with weather shield iv. Air pressure sensor v. Relative humidity sensor vi. Rainfall sensor	01			10,000

	vii. Net radiometer sensor viii. Pyranometer sensor Fully computerized digital and self contained power source system with 8 channel data logger, battery charging solar panel with rechargeable maintenance free batteries, complete system with sensors mounted on a tripod stand, sealed water proof enclosure for data logger, solar charger and battery. Data reporting software SD card (2 GB) adaptor expandable to 32 GB Power management: AC and Solar panel.				
6.	**PM 2.5/PM 10 Air Sampler with Gaseous attachment** (Fine Particulate Air Sampler): Based on design standardized by US-EPA Standard unit supplied with needed accessories fitted with diaphragm low weight pump. Thermo Electrically cooled Gaseous pollutants Sampler Eco-tech Model AAS 118TE An independent stand alone sampler for measurement of SO_2, NO_2, NH_3 and O_3 in ambient air. **Desirable Accessories, Spares & Consumables:** 1. PTFE filter with identification number for each filter, Whatman Make, Pore Size 2um, dia 46.2 mm with PP ring supported. Suitable for monitoring of Pm 2.5 dust. Sealed packet of 50 discs. OR PTFE filter with identification number for each filter, Indigenous Make, pore Size 2um, dia 46.2 mm with PP ring supported. Suitable for monitoring of Pm 2.5 dust. Sealed packet of 50 discs. II. 37 mm dia glass micro fiber Filter paper for WINS Impactor in a sealed packet of 50 discs. III. Impaction Oil for "WINS" Impastor 100 ml bottle. IV. Filter Cassette.	06 06 06 06 06 06 06			25,000
7.	**High Volume air sampler with gaseous attachment**: • Sampler should have filter paper holder for collecting particles of 10 microns and below and cyclone to collect particles of bigger size than 10 microns. • Brushless blower resistant to voltage fluctuations thus eliminating requirement of voltage stabilizer. • Automatic Flow Controller with electronic feedback for constant sampling rate throughout the sampling period. • The system should automatically shutdown in case of flow rate drop below 0.85 m^3 / min • 24 hrs programmable timer to automatically shut off the system after pre-Control set time interval • Gaseous attachment should have Thermo-Electric Cooling system to keep impingers at a cool 15°C even when ambient temperature is 40°C • Focused cooling for rapid and efficient cooling • Special Silica-gel filter tubes to remove entrained particulates & moisture • Improved valve design to maintain constant flow rate 35ml Borosilicate glass impingers • Size of impringers be 240 x 125 x 350mm	01			6,000
8.	**Double beam UV-Visible Spectrophotometer :** Wavelength range: 190-1,100 nm scan speed: 3000 to 2 nm/min Light source change: Auto change from 300 to 360 nm wavelength range, light source can be set (at 0.1 nm adjustments) to auto shift light source from UV to Visible lamp or vice-versa Measurement method: Double beam, Light source: Halogen (20W) & Deuterium Lamp Photometric system: Czerny-Turner mounting	01			16,000

	Detector: Silicon photodiode or PMT but with double detector separately for sample and reference respectively Spectral bandwidth: 1.4 nm or better Wavelength accuracy: ± 0.1 to ± 0.3 nm Wavelength repeatability: ±0.1 nm Stray light: Less than 0.02% Photometric range: Absorbance:-4 to 4 Abs and Transmittance: 0.0 to 400% Photometric accuracy: ±0.004 Abs (at 1.0 Abs) and ±0.002 Abs (at 0.5 Abs) Photometric repeatability: Less than ±0.001 Abs (at 1.0 Abs) Drift: Less than ±0.0003 Abs/h Baseline flatness: Less than ±0.0006 Abs Noise: Less than 0.00005 Abs Standard Software: Photometric, Spectrum, Quantitation, Kinetics, Time scan, Multi-component Quantitation, Bio-method Compatibility: Stand-alone, with Computer, with Printer, with USB drive Connectivity: USB port Optical warranty: System should have at least 5 years warranty on all optical Components Accessories: Pair of 3.5 ml and 1ml Quartz Cuvettes, Desktop Computer & Printer The instrument should be able to handle turbid samples analysis(accessory or built in) Integrating Sphere Attachment: 0°/8° incident integrating sphere with the S/R exchange function of the spectrophotometer • Angle of incident light: 0°/8° • Wavelength range: 220 to 850 nm • Maximum size of reflection sample: 70 mm W x 70 mm H x 20 mm T (0° angle of incidence side), 70 mm W x 70 mm H x 12 mm T (8° angle of incidence side) • Cell holder for transmission sample: with holder for 10 mm square cell (excluding cell), 2 sample plates for BaSO4 standard white board, 2 plates for powder samples				
9.	**COD digester** (Glassware): 15 Reaction Vessels & Air Condensers Vessel size : Dia 39 mm (Approx); Volume 160 ml Temperature : upto 200 C ± 1% Capacity : 15 Samples at a time Sample Size : 20 ml Range: 0 to 500 ppm without dilution. Display : Graphic LCD module with large fonts Keyboard : Aesthetic, Soft touch Membrane Type Timer: Programmable upto 99 hrs 59 Min.	01			1,500
10.	**Vacuum pump oil free:** Capacity 50litre/mm with 0.25 HP motor Vacuum Gauge with regulator, Belt Guard, Moisture Trap, Non Returnable Value, Air Blast	01			500
11.	**Muffle furnace:** Working Temperature 1100°C maximum temp. 1200°C fitted with Microprocessor PID digital Temp. indicator Controller, 8 step Ramping	01			1,500
12.	**Vortex mixture:**Range:0-2500rpm, stainless step less speed regulation of motor, silicone feet and steel base, power 60 w	01			500
13.	**Bomb Calorimeter:** Digital bomb calorimeter; capacity 300 ml; Circular made of corrosion resistant stainless steel alloy; water jacket, regulating valve, safety valve, digital Beckman Thermometer, stirrer, set of standard accessories with oxygen cylinder	01			2,000
14.	**Colony counter:** Display: 4 digits LED; Range and maximum count:0-9999; Auto saving facility in case of power failure; error correction facility; Decrement preventive; Facility to avoid back counting error; dish size: 110mm; 1.7 magnification; 230v± 10% AC, 50Hz; colony counter pen	01			500

15.	**Distillation unit:** Mono-quartz distillation unit, panel mounted with quartz boiler and borosilicate condenser, vertical model, output capacity 2.5 L/h	01			1,000
16.	**Computer with specific configuration for Remote Sensing and GIS operations :** **Processor:** 4th Gen Intel Core i7 Desktop Processor i7-3770 (3.4 GHz-Quadra-Core) ➢ TurboBoost 2.0 upto 3.9 GHz ➢ 8MB Integrated Intel Smart cache ➢ Enhanced SpeedStep Technology ➢ Intel HyperTreading Technogy ➢ Intel 64, VT-x ➢ Intel Z75 Express Chipset **RAM:** 8GB PC3-12800 DDR3-1600 (Max-RAM needed (32GB) **Hard Disk:** Max 2 TB Serial ATA II Hard Drive ➢ 300 MB/sec @7200RPM **Graphic Card:** ➢ NVIDIA GeForce GT 640 Graphics ➢ Max 3GB DDR3 Dedicated Memory ➢ DirectX 11 Support ➢ HDMI, DVI, VGA **Digital media Card Reader:** 15-in-one Digital Media redaer ➢ CFI, CF II, SM, MMC, MMc Plus, RS-MMc, MMC Mobile, SD, Mini SD, xD, Micro Drive, MS, MS Pro, MS-Duo, MS Pro Duo **Communication:** WLAN: Integrated 10/100/1000 Gigabit Ethernet (Broadband ready) ➢ Wireless LAN-802.11 a/b/g/n **Monitor:** 23" LED Backlit Widescreen Monitors **CD/DVD RW:** 12X Blu-ray CD/DVD RW SuperMulti Combo Drive **I/O Connectors:** Two Top Access Ports ➢ Four Front Access Hi-Speed USB 2.0 Ports ➢ Rear Access Ports **Operating System:** Windows-7 Professional	01			2,000
17	**GPS receiver sporting a barometer altimeter :** Physical dimensions: 2.4" x 6.3" x 1.4" (6.1 x 16.0 x 3.6 cm) Display size, WxH:1.43"x2.15" (3.6x5.5 cm); 2.6" diag (6.6 cm) Display resolution, WxH: 160 x 240 pixels Display type: transflective, 65-K color TFT Weight: 260 gm (with batteries) Battery: 2 AA batteries; NiMH or Lithium Battery life: up to 20 hours Water rating: IPX7 High-sensitivity receiver: Yes Interface: USB Base map: Yes Ability to add maps: Yes Built-in memory: Yes (Up to 2 GB) Accepts data cards: Yes (micro SD™ and other card) Waypoints/favorites/location: 2000 Routes: 200 Track log: 10,000 points, 200 saved tracks Automatic routing (turn by turn routing on roads): Yes with optional mapping for detailed roads Electronic compass: Yes (tilt-compensated 3-axis) Barometric altimeter: Yes Geo-caching-friendly: Yes (Paperless) Custom maps compatible: Yes Sun and moon information: Yes Area calculation: Yes Custom POIs (ability to add additional points of interest): Yes	01			1,000
18.	**Tissue Homogenizer :** 100 ml capacity with mechanical timer;	01			500

	Electrically operated with DC motor; 100 ml spare Teflon tissue grinder with S.S. rod and glass tube				
19.	**Digital camera :** SLR digital camera (12 million pixels) with rechargeable batteries and charger and with SLR microscope adapter & with 1 GB memory card, standard zoom lens (1) and carry bag (The camera offered is recommended for microscope with infinity corrected systems)	01			1,500
20.	**Video Camera:** 12 x Optical Zoom Sony G Lens Optical Zoom Lens; Optical Steady Shot; Professional-Style Lens Rings; Full Manual Control with at least 2.7-inch Touch screen LCD; Stereo Microphone; Face / Smile Detection; 32 GB Built-In-Memory; Exmor R CMOS Sensor: 7.1 Mp Still Photos (3072 x 2304); Large Lens Ring Controls; PRO Duo (High Sped) memory stick; Dolby digital 2 ch audio format; at least 7 mega Pixels (3072 x 2304), 4:3 still picture resolution; with D-Range optimizer, Colour Viewfinder, Direct Copy, USB Terminal, External Mic. Input complete with all accessories and warranty.	01			3,000
21.	**Environmental Pollution Analyzer (Continuous Online Air Quality Monitor Equipment):** Equipment to measure PM10, PM2.5, SO_2 and NO_x and a Data logger for logging the data. Accessories like cabin for installation of the equipments, UPS, Display Board, Calibration Gas Cylinders, Sample Conditioning Unit, etc. The firm should install the equipments at different sites and maintain the equipment during the warranty period. All the instruments should be USEPA approved and installed in Rack Cabinet and should meet the following specifications: 1. **Suspended Particular Monitor (PM10)** 1.Measuring Parameter: PM10 (Particulate matter of less than 10 um size) 2. Operating Principle: Continuous measurement of PM10 using Beta rays attenuation method 3. Cut of size 0 to 10 microns 4. Measurement range : 0-1000 ug / Cu.m 5. Data accuracy: within +_1 ug / Cu.m 6. Air flow rate: 16.7 Litres/ minute 7. Filter Material: Glass fiber filter tape (60 days of operation per roll) 8. Sampling Duration: 60 minutes 9. Display : Digital 10. Display Resolution ; 1ug/Cu.m 11. Operating Temp:0-50oC 12. Power Supply: 230V AC 13. Serial Interface: Data retrieval through RS-232 Serial Port 14. Ambient temp: -30 0C to +55 0C 15. USEPA designation: Confirming to USEPA automated FRM designation 16. Display Indicator: Data, Time, flow rate and concentration 17. Alarm Duration Break down: Tape failure, flow rate failure etc. 18. Self Calibration: Automatic Zero and Span check at the end of every hour 19. Enclosure: Weather- proof enclosed for sampling head II. **Suspended Particular Monitor (PM2.5)** 1.Measuring parameter : PM2.5(Particulate matter of less the 2.5 um size 2. Operating Principle : Continuous measurement of PM2.5 using Beta ray attenuation method 3.Cut off size 0 to 2.5 microns using WINS Impactor 4.Measurement range: 0-1000 ug / Cu.m 5. Data accuracy: within +- 1 ug / Cu.m 6. Air flow rate: 16.7 Litres/ minute 7. Filter Material: Glass fiber tape (60 days of operation per roll) 8. Sampling Duration: 60 minutes 9. Display : Digital	01			70,000

	10. Display Resolution; 1ug/Cu.m 11. Operating Temp:0-50oc 12. Power Supply: 230V AC 13. Serial Interface : Data retrieval through RS-232 Serial Port 14. Memory : Storage capacity for one year data @ one record per hour 15. Ambient temp: -30 0c to +55 0c 16.USEPA designation: Confirming to USEPA automated FRM designation 17.Display Indicator : Data, Time, flow rate and concentration should be display 18.Alarm Duration Break down:Tape failure, flow rate failure etc 19. Calibration : Built-in Calibration arrangement 20. Enclosure : Weather – proof enclosed for sampling head III. **Sulphur Dioxide Analyzer (SO2)** 1.Measuring Parameter : SO2 on the Ambient air 2. Operating Principle : UV fluorescence method 3. Measurement range : 0-0.05, 0-0.1, 0-0.2, 0-0.5, 0-1.0 ppm 4. Lower detection limit : 0.5 ppb 5. Linearity : +- 1% of full scale 6. Reproducibility : +- 1% of full scale 7. Display : Digital 8. Zero drift : Within +- 0.5 ppb/day 9. Span drift : Within +- 0.5 ppb/day 10. Ambient Temp : 5-40 oC 11.Serial Interface : Data retrieval through RS-232 Serial Port 12.Power : 230 V AC 13.USEPA designation : Confirming to USEPA automated FRM designation 14.Display : Digital IV. **Nitrogen Oxide Analyzer (NOx)** 1.Measuring Parameter : NOx on the Ambient air 2. Operating Principle : Chemiluminescence 3. Measurement range : 0-0.05, 0-0.1, 0-0.2, 0-0.5, 0-1.0 ppm 4. Minimum detection : 0.5 ppb 5. Linearity : +- 1% of full scale 6. Reproducibility : +- 1% of full scale 7. Display : Digital 8. Zero drift : Within +- 0.5 ppb/day 9. Span drift : Within +- 0.5 ppb/day 10.Ambient Temp : 5-40 oC 11.Serial Interface : Data retrieval through RS-232 Serial Port 12.Power : 230 V AC 13.USEPA designation : Confirming to USEPA automated FRM designation 14.Display : Digital V. **Sample Handling System** 1.Rain cap for Protection 2.Hood arrangement 3.Moisture Trap 4.Manifold Rack Cabinet 5.Dual Bay 19'' Rack for installing NOX, SO2, PM10 & PM2.5 Analyzers 6. Necessary earthing and lightning arrester 7. 16/32 channel Online Data logger Sampling rate, 1 minutes 8.On Line Graphic Display 9. On Line Statistical Display 10.Historical Graphs memory capacity to log one year data 11.HP/Dell make with Laser Jet printer should be supplied 12. Software should provide for transmission of data and alert in case of abnormal values & breakdowns through SMS and email. VI. **Display Board** : LED display board of 2" width X 6'' length with day and night visibility				

	VII. **UPS :** 5 KVA, 1 hour back up, SMF Batteries VIII. **Cabin for Installation of equipment** MS portable cabin with two partitions, one with dimensions of 10'x12' and second with dimensions of 2' x 12' with an internal door connecting two partitions Polyurethane foam packing material One door with locking facility 02 windows 1.5 Ton Split AC (02 Nos.) with auto-switching facility Power sockets Arrangement for lifting the cabin with crane. IX. **Integrating Sound Level Data logger :** • Should meet ANSI and IEC 651 Type 02 standard • 30 to 130dB measurement range with +-1.5dB Accuracy • Data logging function recording up to 32, 000 records • Programmable integrating time, real time calendar/clock • Display modes: SPL, SEL, L max/L min and Leq • Linearity over wide range (100dB) • Should include RS-232 serial cable & Windows compatible soft ware • Complete with all accessories.				
22.	**Digital Water Testing kit :** Portable water testing kit digital photometer, arsenameter, pH meter, Dissolved Oxygen meter, Conductivity / TDS mater, Turbidity meter and capable of testing ammonia, nitrites, nitrates, chlorine and fluorides with : • Digital twin incubator, featuring automatic timer and LCD display for upto 50 bacteriological test, fully portable Incubator, which can be powered via external rechargeable battery, AC mains operation, DC operation via vehicle lighter socket or even solar power, Independent chamber temperature control, with an accuracy of +- 0.1)C, allowing simultaneous incubation of both faecal & total coliforms • Hand-held digital meter for ph, Conductibility/TDS & Turbidity • Direct reading Digital Photometer for testing different chemical parameters • Digital arsenic testing devices for measuring arsenic down to ppb levels • With reagents & Consumables to carry out microbiological tests and tests of Ammonia, Arsenic, Chlorine (DPD1 &3) Fluoride, Nitrites and Nitrates • Complete with all accessories	02			10,000
	Total amount of EMD	--	--	--	

1. I have carefully read and understood all the terms and conditions of the tender and here by convey my acceptance of the same.
2. The information / documents furnished along with the above application are true and authentic to the best of my knowledge and belief. I / We, am / are well aware of the fact that furnishing of any false information / fabricated document would lead to rejection of my tender at any stage besides liabilities towards prosecution under appropriate law.
3. **Declaration:** I hereby certify that the information furnished above is true and correct to the best of my / our knowledge. I understand that in case any deviation is found in the above statement at any stage, I / we will be blacklisted and will not have any dealing with the University in future.
4. The firm is not a black listed firm, if found at later date, my tender can be rejected, even after awarded.

Signature with date & Seal of the agency : .....
Name of the applicant : .....
Designation : .....

Annexure–II

Chapter–IV: Financial bid: To be utilized by the bidders for quoting their prices of equipment/ instruments items wise along with specification and to submit to Central University Jammu along in separate sealed envelope.

Sl. No.	Specification	Qty. Req. (Approx)	Make & Model	Unit Cost (including all taxes & charges)	Total Cost (including all taxes & charges)
1	**Environment Chamber:** Outer chamber made of CRC sheet duly powder coated Inner chamber made of stainless steel Tray made of stainless steel Temperature: 10^0C to 60^0C controlled through microprocessor based digital temperature indicator cum controller Humidity: 40% to 95% RH, controlled through a digital humidity indicator cum controller Capacity: 171 lts, Volume: 6.1 cuft, No. of shelves: 2 Display: Microprocessor digital controller with LED display	01			
2.	**Orbital Incubator Shaker:** 175 litre (16x 500ml) Temperature range: 5°C to 80°C Accuracy: ± 0.5 °C RPM: 25-300 RPM continuously variable & settable Platform to accommodate interchangeable clams of different size of flasks (100ml x40, 150 ml x 34,250 ml x23, 500ml x16, 1000 ml x9) Chamber illumination with fluorescent lamp Timer 0-24 hours day night cycle Microprocessor PID digital temperature indicator cum controller Digital display for temp and speed Automatic restart at preset speed in case of power failure	01			
3.	**Refrigerated Cooling centrifuge** : Max speed: 17,500 rpm; Max RCF: more than 30000*g Speed / RCF Increment in steps of 1,100 Temperature range: - 10° to + 40° C Maintenance free, noiseless, brushless motor drive. Large size display screen of set & run parameters i.e. speed, rcf, temperature, time, rotor number Self diagnostic error messages Short run facility with programmable preset speed & display run time in seconds Automatic magnetic rotors from over speeding 2 linear accell & decell curves for soft start/ soft stop facility to avoid mixing of sedimentation time increment in 1 or 10 sec. Double lid locks for additional safety, selectable auto lid opening. 50 programs memory and Stabilizer Rotors Fixed Angle Rotor for 24 X 1.5/2.0ml with more than 30000*g Fixed Angle Rotor for 6 X 15/50ml with more than 7000*g	01			
4.	**Deep Freezer (vertical):** Outer chamber made of CRC sheet duly powder coated Inner chamber made of stainless steel Space between inner and outer wall fitted with foamed in place of PUF insulation Temperature: ambient to -40°C, Volume: 6 cuft, Capacity: 171 ltr	01			
5.	**Automatic Weather station :** Sensors for recording parameters:	01			

	ix. Anemometer sensor with brass cups and nuts for recording wind speed. x. Wind vane (brass) sensor for recording wind direction. xi. Air temperature sensor with weather shield xii. Air pressure sensor xiii. Relative humidity sensor xiv. Rainfall sensor xv. Net radiometer sensor xvi. Pyranometer sensor Fully computerized digital and self contained power source system with 8 channel data logger, battery charging solar panel with rechargeable maintenance free batteries, complete system with sensors mounted on a tripod stand, sealed water proof enclosure for data logger, solar charger and battery. Data reporting software SD card (2 GB) adaptor expandable to 32 GB Power management: AC and Solar panel.				
6.	**PM 2.5/PM 10 Air Sampler with Gaseous attachment** (Fine Particulate Air Sampler): Based on design standardized by US-EPA Standard unit supplied with needed accessories fitted with diaphragm low weight pump. Thermo Electrically cooled Gaseous pollutants Sampler Eco-tech Model AAS 118TE An independent stand alone sampler for measurement of SO_2, NO_2, NH_3 and O_3 in ambient air. **Desirable Accessories, Spares & Consumables:** 1. PTFE filter with identification number for each filter, Whatman Make, Pore Size 2um, dia 46.2 mm with PP ring supported. Suitable for monitoring of Pm 2.5 dust. Sealed packet of 50 discs. OR PTFE filter with identification number for each filter, Indigenous Make, pore Size 2um, dia 46.2 mm with PP ring supported. Suitable for monitoring of Pm 2.5 dust. Sealed packet of 50 discs. II. 37 mm dia glass micro fiber Filter paper for WINS Impactor in a sealed packet of 50 discs. III. Impaction Oil for "WINS" Impastor 100 ml bottle. IV. Filter Cassette.	06 06 06 06 06 06 06			
7.	**High Volume air sampler with gaseous attachment**: • Sampler should have filter paper holder for collecting particles of 10 microns and below and cyclone to collect particles of bigger size than 10 microns. • Brushless blower resistant to voltage fluctuations thus eliminating requirement of voltage stabilizer. • Automatic Flow Controller with electronic feedback for constant sampling rate throughout the sampling period. • The system should automatically shutdown in case of flow rate drop below 0.85 m^3 / min • 24 hrs programmable timer to automatically shut off the system after pre-Control set time interval Gaseous attachment should have Thermo-Electric Cooling system to keep impingers at a cool 15°C even when ambient temperature is 40°C Focused cooling for rapid and efficient cooling Special Silica-gel filter tubes to remove entrained particulates & moisture Improved valve design to maintain constant flow rate 35ml Borosilicate glass impingers	01			

	• Size of impringers be 240 x 125 x 350mm				
8.	**Double beam UV-Visible Spectrophotometer :** Wavelength range: 190 - 1100 nm scan speed: 3000 to 2 nm/min Light source change: Auto change from 300 to 360 nm wavelength range, light source can be set (at 0.1 nm adjustments) to auto shift light source from UV to Visible lamp or vice-versa Measurement method: Double beam, Light source: Halogen (20W) & Deuterium Lamp Photometric system: Czerny-Turner mounting Detector: Silicon photodiode or PMT but with double detector separately for sample and reference respectively Spectral bandwidth: 1.4 nm or better Wavelength accuracy: ± 0.1 to ± 0.3 nm Wavelength repeatability: ±0.1 nm Stray light: Less than 0.02% Photometric range: Absorbance:-4 to 4 Abs and Transmittance: 0.0 to 400% Photometric accuracy: ±0.004 Abs (at 1.0 Abs) and ±0.002 Abs (at 0.5 Abs) Photometric repeatability: Less than ±0.001 Abs (at 1.0 Abs) Drift: Less than ±0.0003 Abs/h Baseline flatness: Less than ±0.0006 Abs Noise: Less than 0.00005 Abs Standard Software: Photometric, Spectrum, Quantitation, Kinetics, Time scan, Multi-component Quantitation, Bio-method Compatibility: Stand-alone, with Computer, with Printer, with USB drive Connectivity: USB port Optical warranty: System should have at least 5 years warranty on all optical Components Accessories: Pair of 3.5 ml and 1ml Quartz Cuvettes, Desktop Computer & Printer The instrument should be able to handle turbid samples analysis(accessory or built in) Integrating Sphere Attachment: 0°/8° incident integrating sphere with the S/R exchange function of the spectrophotometer • Angle of incident light: 0°/8° • Wavelength range: 220 to 850 nm • Maximum size of reflection sample: 70 mm W x 70 mm H x 20 mm T (0° angle of incidence side), 70 mm W x 70 mm H x 12 mm T (8° angle of incidence side) • Cell holder for transmission sample: with holder for 10 mm square cell (excluding cell), 2 sample plates for BaSO4 standard white board, 2 plates for powder samples	01			
9.	**COD digester :** Glassware : 15 Reaction Vessels & Air Condensers Vessel size : Dia 39 mm (Approx); Volume 160 ml Temperature : upto 200 C ± 1% Capacity : 15 Samples at a time Sample Size : 20ml Range: 0 to 500 ppm without dilution. Display : Graphic LCD module with large fonts Keyboard : Aesthetic, Soft touch Membrane Type Timer: Programmable upto 99 hrs 59 Min.	01			
10.	**Vacuum pump oil free:** Capacity 50litre/mm with 0.25 HP motor Vacuum Gauge with regulator, Belt Guard, Moisture Trap,	01			

	Non Returnable Value, Air Blast				
11.	**Muffle furnace:** Working Temperature 1100°C maximum temp. 1200°C fitted with Microprocessor PID digital Temp. indicator Controller, 8 step Ramping	01			
12.	**Vortex mixture:**Range:0-2500rpm, stainless step less speed regulation of motor, silicone feet and steel base, power 60 w	01			
13.	**Bomb Calorimeter:** Digital bomb calorimeter; capacity 300 ml; Circular made of corrosion resistant stainless steel alloy; water jacket, regulating valve, safety valve, digital Beckman Thermometer, stirrer, set of standard accessories with oxygen cylinder	01			
14.	**Colony counter:** Display: 4 digits LED; Range and maximum count:0-9999; Auto saving facility in case of power failure; error correction facility; Decrement preventive; Facility to avoid back counting error; dish size: 110mm; 1.7 magnification; 230v± 10% AC, 50Hz; colony counter pen	01			
15.	**Distillation unit:** Mono-quartz distillation unit, panel mounted with quartz boiler and borosilicate condenser, vertical model, output capacity 2.5 L/h	01			
16.	**Computer with specific configuration for Remote Sensing and GIS operations :** **Processor:** 4th Gen Intel Core i7 Desktop Processor i7-3770 (3.4 GHz-Quadra-Core) ➢ TurboBoost 2.0 upto 3.9 GHz ➢ 8MB Integrated Intel Smart cache ➢ Enhanced SpeedStep Technology ➢ Intel HyperTreading Technogy ➢ Intel 64, VT-x ➢ Intel Z75 Express Chipset **RAM:** 8GB PC3-12800 DDR3-1600 (Max-RAM needed (32GB). **Hard Disk:** Max 2 TB Serial ATA II Hard Drive ➢ 300 MB/sec @7200RPM **Graphic Card:** ➢ NVIDIA GeForce GT 640 Graphics ➢ Max 3GB DDR3 Dedicated Memory ➢ DirectX 11 Support ➢ HDMI, DVI, VGA **Digital media Card Reader:** 15-in-one Digital Media redaer ➢ CFI, CF II, SM, MMC, MMc Plus, RS-MMc, MMC Mobile, SD, Mini SD, xD, Micro Drive, MS, MS Pro, MS-Duo, MS Pro Duo **Communication:** WLAN: Integrated 10/100/1000 Gigabit Ethernet (Broadband ready) ➢ Wireless LAN-802.11 a/b/g/n **Monitor:** 23" LED Backlit Widescreen Monitors **CD/DVD RW:** 12X Blu-ray CD/DVD RW Super Multi Combo Drive **I/O Connectors:** Two Top Access Ports ➢ Four Front Access Hi-Speed USB 2.0 Ports ➢ Rear Access Ports **Operating System:** Windows-7 Professional	01			
17	**GPS receiver sporting a barometer altimeter :** Physical dimensions: 2.4" x 6.3" x 1.4" (6.1x 16.0 x 3.6 cm) Display size, WxH:1.43"x2.15" (3.6x5.5cm); 2.6" diag (6.6 cm) Display resolution, WxH: 160 x 240 pixels Display type: transflective, 65-K color TFT Weight: 260 gm (with batteries) Battery: 2 AA batteries; NiMH or Lithium Battery life: up to 20 hours	01			

	Water rating: IPX7 High-sensitivity receiver: Yes Interface: USB Base map: Yes Ability to add maps: Yes Built-in memory: Yes (Up to 2 GB) Accepts data cards: Yes (micro SD™ and other card) Waypoints/favorites/location: 2000 Routes: 200 Track log: 10,000 points, 200 saved tracks Automatic routing (turn by turn routing on roads): Yes with optional mapping for detailed roads Electronic compass: Yes (tilt-compensated 3-axis) Barometric altimeter: Yes Geo-caching-friendly: Yes (Paperless) Custom maps compatible: Yes Sun and moon information: Yes Area calculation: Yes Custom POIs (ability to add additional points of interest): Yes				
18.	**Tissue Homogenizer :** 100 ml capacity with mechanical timer; Electrically operated with DC motor; 100 ml spare Teflon tissue grinder with S.S. rod and glass tube	01			
19.	**Digital camera :** SLR digital camera (12 million pixels) with rechargeable batteries and charger and with SLR microscope adapter & with 1 GB memory card, standard zoom lens (1) and carry bag (The camera offered is recommended for microscope with infinity corrected systems)	01			
20.	**Video Camera:** 12 x Optical Zoom Sony G Lens Optical Zoom Lens; Optical Steady Shot; Professional-Style Lens Rings; Full Manual Control with at least 2.7-inch Touch screen LCD; Stereo Microphone; Face / Smile Detection; 32 GB Built-In-Memory; Exmor R CMOS Sensor: 7.1 Mp Still Photos (3072 x 2304); Large Lens Ring Controls; PRO Duo (High Sped) memory stick; Dolby digital 2 ch audio format; at least 7 mega Pixels (3072 x 2304), 4:3 still picture resolution; with D-Range optimizer, Colour Viewfinder, Direct Copy, USB Terminal, External Mic. Input complete with all accessories and warranty.	01			
21.	**Environmental Pollution Analyzer (Continuous Online Air Quality Monitor Equipment):** Equipment to measure PM10, PM2.5, SO_2 and NO_x and a Data logger for logging the data. Accessories like cabin for installation of the equipments, UPS, Display Board, Calibration Gas Cylinders, Sample Conditioning Unit, etc. The firm should install the equipments at different sites and maintain the equipment during the warranty period. All the instruments should be USEPA approved and installed in Rack Cabinet and should meet the following specifications: **1.Suspended Particular Monitor (PM10)** 1.Measuring Parameter: PM10 (Particulate matter of less than 10 um size) 2. Operating Principle: Continuous measurement of PM10 using Beta rays attenuation method 3. Cut of size 0 to 10 microns 4. Measurement range : 0-1000 ug / Cu.m 5. Data accuracy: within + 1 ug / Cu.m 6. Air flow rate: 16.7 Litres/ minute 7. Filter Material: Glass fiber filter tape (60 days of operation per roll) 8. Sampling Duration: 60 minutes 9. Display : Digital 10. Display Resolution : 1ug/Cu.m	01			

	11. Operating Temp:0-50oC 12. Power Supply: 230V AC 13. Serial Interface: Data retrieval through RS-232 Serial Port 14. Ambient temp: -30 0C to +55 0C 15. USEPA designation: Confirming to USEPA automated FRM designation 16. Display Indicator: Data, Time, flow rate and concentration 17. Alarm Duration Break down: Tape failure, flow rate failure etc. 18. Self Calibration: Automatic Zero and Span check at the end every hour 19. Enclosure: Weather- proof enclosed for sampling head **II. Suspended Particular Monitor (PM2.5)** 1.Measuring parameter : PM2.5(Particulate matter of less the 2.5 um size 2. Operating Principle : Continuous measurement of PM2.5 using Beta ray attenuation method 3.Cut off size 0 to 2.5 microns using WINS Impactor 4.Measurement range: 0-1000 ug / Cu.m 5. Data accuracy: within +- 1 ug / Cu.m 6. Air flow rate: 16.7 Litres/ minute 7. Filter Material: Glass fiber tape (60 days of operation per roll) 8. Sampling Duration: 60 minutes 9. Display : Digital 10. Display Resolution; 1ug/Cu.m 11. Operating Temp:0-50oc 12. Power Supply: 230V AC 13. Serial Interface : Data retrieval through RS-232 Serial Port 14. Memory : Storage capacity for one year data @ one record per hour 15. Ambient temp: -30 0c to +55 0c 16.USEPA designation: Confirming to USEPA automated FRM designation 17.Display Indicator : Data, Time, flow rate and concentration should be display 18. Alarm Duration Break down: Tape failure, flow rate failure etc 19. Calibration : Built-in Calibration arrangement 20. Enclosure : Weather – proof enclosed for sampling head **III. Sulphur Dioxide Analyzer (SO2)** 1.Measuring Parameter : SO2 on the Ambient air 2. Operating Principle : UV fluorescence method 3. Measurement range : 0-0.05, 0-0.1, 0-0.2, 0-0.5, 0-1.0 ppm 4. Lower detection limit : 0.5 ppb 5. Linearity : +- 1% of full scale 6. Reproducibility : +- 1% of full scale 7. Display : Digital 8. Zero drift : Within +- 0.5 ppb/day 9. Span drift : Within +- 0.5 ppb/day 10. Ambient Temp : 5-40 oC 11.Serial Interface : Data retrieval through RS-232 Serial Port 12.Power : 230 V AC 13.USEPA designation : Confirming to USEPA automated FRM designation 14.Display : Digital **IV. Nitrogen Oxide Analyzer (NOx)** 1.Measuring Parameter : NOx on the Ambient air 2. Operating Principle : Chemiluminescence 3. Measurement range:0-0.05,0-0.1, 0-0.2, 0-0.5, 0-1.0 ppm				

	4. Minimum detection : 0.5 ppb 5. Linearity : +- 1% of full scale 6. Reproducibility : +- 1% of full scale 7. Display : Digital 8. Zero drift : Within +- 0.5 ppb/day 9. Span drift : Within +- 0.5 ppb/day 10. Ambient Temp : 5-40 oC 11. Serial Interface: Data retrieval through RS-232 Serial Port 12. Power : 230 V AC 13. USEPA designation : Confirming to USEPA automated FRM designation 14. Display : Digital **V. Sample Handling System** 1. Rain cap for Protection 2. Hood arrangement 3. Moisture Trap 4. Manifold Rack Cabinet 5. Dual Bay 19'' Rack for installing NOX, SO2, PM10 & PM2.5 Analyzers 6. Necessary earthing and lightning arrester 7. 16/32 channel Online Data logger Sampling rate, 1 minutes 8. On Line Graphic Display 9. On Line Statistical Display 10. Historical Graphs memory capacity to log one year data 11. HP/Dell make with Laser Jet printer should be supplied 12. Software should provide for transmission of data and alert in case of abnormal values and breakdowns through SMS and email. **VI. Display Board** : LED display board of 2" width X 6'' length with day and night visibility **VII. UPS:** 5 KVA, 1 hour back up, SMF Batteries **VIII. Cabin for Installation of equipment** MS portable cabin with two partitions, one with dimensions of 10'x12' and second with dimensions of 2' x 12' with an internal door connecting two partitions Polyurethane foam packing material One door with locking facility 02 windows 1.5 Ton Split AC (02 Nos.) with auto-switching facility Power sockets Arrangement for lifting the cabin with crane. **IX. Integrating Sound Level Data logger :** • Should meet ANSI and IEC 651 Type 02 standard • 30 to 130dB measurement range with +-1.5dB Accuracy • Data logging function recording up to 32, 000 records • Programmable integrating time, real time calendar/clock • Display modes: SPL, SEL, L max/L min and Leq • Linearity over wide range (100dB) • Should include RS-232 serial cable and Windows compatible soft ware • Complete with all accessories.				
22.	**Digital Water Testing kit :** Portable water testing kit digital photometer, arsenameter, pH meter, Dissolved Oxygen meter, Conductivity / TDS mater, Turbidity meter and capable of testing ammonia, nitrites, nitrates, chlorine and fluorides with : • Digital twin incubator, featuring automatic timer and LCD display for upto 50 bacteriological test, fully	02			

	portable Incubator, which can be powered via external rechargeable battery, AC mains operation, DC operation via vehicle lighter socket or even solar power, Independent chamber temperature control, with an accuracy of +- 0.1)C, allowing simultaneous incubation of both faecal & total coliforms • Hand-held digital meter for ph, Conductibility/TDS & Turbidity • Direct reading Digital Photometer for testing different chemical parameters • Digital arsenic testing devices for measuring arsenic down to ppb levels • With reagents & Consumables to carry out microbiological tests and tests of Ammonia, Arsenic, Chlorine (DPD1 &3) Fluoride, Nitrites and Nitrates • Complete with all accessories				

1. I have carefully read and understood all the terms and conditions of the tender and hereby convey my acceptance of the same.

2. The information / documents furnished along with the above application are true and authentic to the best of my knowledge and belief. I / We, am / are well aware of the fact that furnishing of any false information / fabricated document would lead to rejection of my tender at any stage besides liabilities towards prosecution under appropriate law.

3. **Declaration:** I hereby certify that the information furnished above is true and correct to the best of my / our knowledge. I understand that in case any deviation is found in the above statement at any stage, I / we will be blacklisted and will not have any dealing with the University in future.

4. The firm is not a black listed firm, if found at later date, my tender can be rejected, even after awarded.

Signature with date & Seal of the agency : .....

Name of the applicant : .....

Designation : .....