

TRIPURA UNIVERSITY
(A Central University)
Suryamaninagar
Tripura West – 799 130

No.F.TU/FIN/FIST-NER/198/09

Dated:- 07.09.2009

NOTICE INVITING QUOTATIONS

Sealed quotations are invited from the reputed manufacturers/ authorized dealers for the supply of various laboratory equipments, UPS & research and analytical instruments so as to reach to the office of the undersigned on or before 22.09.2009. Details can be seen below. The University reserves the right to accept or reject any or all quotations without assigning any reason thereof.

Sd/-
(Dr. K.B. Jamatia)
Registrar (Officiating)

Address for correspondence:

The Finance Officer,
Tripura University
(A Central University),
Tripura University City Centre Office,
Gandhighat, Agartala, Tripura (W),
Pin-799001

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List of equipments/Items

I. Laboratory Equipments

SL. No.	Name of Equipments/Items	Quantity
1.	Binocular Microscope with built-in-light source, anti-fungus achromatic objectives 4x, 10x,40x,100x	2 nos.
2.	Stereozoom Microscope with Built-in-light source (incident & transmitted), zoom ratio 1:8/1:6.3/ 1:7	6 nos.
3.	Microscope Image Projection System	2 nos.
4.	Digital Camera for Microphotography with Microscope adaptor	1 no.
5.	Camera Lucida Drawing Apparatus for Microscope	10 Nos.
6.	Micrometers for Microscope, Stage & ocular.	10 sets
7.	Water bath Shaker	2 Nos.
8.	Orbital Shaking Incubator with accessories.	1 No.
9.	Cooling Microfuge	1 No.
10.	UV-Vis Spectrophotometer	3 Nos.
11.	Precision Balance 1 mg accuracy (External Calib)	3 Nos.
12.	Autoclave	1 No.
13.	pH Meter, standard	3 Nos.
14.	Digital BOD Analyst	1 No.
15.	Multiparameter Water Analysis Kit	1 No.
16.	Digital Turbidity Meter	1 No.
17.	Skinfold Calipers	1 No.
18.	pH Meter, Cyberscan	1 No.
19.	UV-Vis Spectrophotometer(190-1100nm)	1 No.
20.	Spectroquant Thermoreactor	1 No.
21.	Analytical Balance, 0.1 mg accuracy, External calibration.	2 Nos.
22.	High Speed Cooling Centrifuge with accessories	1 No.
23.	Communication Training Kit 17 items including 12 Modulation & demodulation kits of different types.	1 set
24.	Communication Training Kit Accessories 1. 20 MHZ C.R.O. Dual Channel, Dual Trace 2. Sine & square generator 3. Function generator A.M. facility.	1 set
25.	Curie Temperature Kit.	1 No.
26.	Dielectric Constant Kit for Solids	1 No.
27.	Lattice Dynamic Kit with frequency meter with C.R.O. 30 MHz 2 Channel oscilloscope.	1 No.
28.	Software Package: Statistica AXA 5 users License	2 Nos.

II. Uninterrupted Power Supply Units

SL. No.	Name of Equipments/Items	Quantity
1.	120 KVA On-line UPS, See Technical Specifications below	2 Nos.
2.	60 KVA On-line UPS, See Technical Specifications below	3 Nos.

III. Research & Analytical Equipments

SL. No.	Name of Equipments/Items	Quantity
1.	Gas Chromatograph – Mass Spectroscopy, See Technical Specifications below	1 No.
2.	High Performance Liquid Chromatography, See Technical Specifications below	1 No.

TECHNICAL SPECIFICATIONS FOR 60 KVA / 120 KVA ON-LINE UPS

PARAMETER	REQUIRED SPECIFICATIONS	OFFERED SPECIFICATIONS	COMPLIANCE/ DEVIATIONS
General	60 KVA / 120 KVA On-Line UPS System with facility for parallel redundant (N+1) configuration for upto 04 modules to increase UPS capacity or to enhance system reliability		
Technology	DSP (Digital Signal Processing) Technology using IGBT rectifier and IGBT inverter		
INPUT PARAMETERS			
Input voltage and voltage tolerance	380/400/415V AC with tolerance range of (-15%, +20%) at 100% load (-30%, +20%) at 50% load		
Input frequency	45-55 Hz		
Input current distortion	<5% THDi		
Input power factor	0.99 without using filters		
Rectifier type	IGBT based only		
Isolation Transformer	Dedicated Isolation transformer (1:1) at the input side , such that load is isolated even in bypass mode.		
OUTPUT PARAMETERS			
Output power	60 KVA / 54 KW @ 0.9 p.f. 120 KVA / 96 KW @ 0.9 p.f.		
Output power factor	0.9		
Output voltage Regulation	380 / 400/ 415 VAC, Three Phase \pm 1%		
Overall Efficiency	94% or better at 100% rated load		
User interface			
LCD display	Digital front panel display with 4x80 (4 lines, 80 characters) backlit Graphical LCD display for measuring UPS parameters & changing UPS Settings, Event Log etc.		
External Contacts	2 x X-slot, 1 x relay contact, 1 x emergency power off input, 2 x environmental input		
BATTERY			
Back-up time (Total number of batteries, Voltage of each battery, Ampere-Hour rating and Total Volt-Ampere-Hour rating of the Battery Bank Offered should be clearly mentioned.)	The system must be capable of providing 60/90 minutes of battery back-up time at full load using Sealed lead-acid Maintenance Free batteries. 60 KVA UPS Min VAH = 48000 VAH for 60 mins back-up Min VAH = 96000 VAH for 90 mins back-up 120 KVA UPS Min VAH = 96000 VAH for 60 mins back-up Min VAH = 192000 VAH for 90 mins back-up		
Standards (Compulsory)	(Documentary evidence to be furnished)		
IEC 62040-1-1	General and safety requirements for UPS used in operator access areas		
IEC 60950	Safety of UPS electrical equipment		
EN 50091-2	UPS EMC requirements		
RoHS/WEEE	Restriction on use of Hazardous Substances and waste equipment		
Preferred Brands	Emerson, APC, MGE, Eaton-Powerware, Socomec, Mitsubishi, GE, Piller, Chloride		

Price Format

SNO.	PARTICULARS	UNIT PRICE (In Rs.)
1.b)	60 KVA On-Line UPS Systems	
i)	60 KVA On-Line UPS System excluding batteries and confirming to tender specifications Make:	
ii)	60/90 minutes battery back-up for 60 KVA UPS using Sealed Maintenance Free Batteries (96000 VAH) and confirming to tender specifications	
iii)	80 KVA Isolation Transformer to be connected at the input of 60 KVA UPS and confirming to tender specifications	
A	TOTAL for 60 KVA UPS including Input Isolation Transformer, SMF Batteries etc. complete with all accessories and confirming to tender specifications	
B	VAT (in %)	
C	Installation & Commissioning Charges	
D	Service Tax on C (in %)	
E	GRAND TOTAL for Supply, Installation and commissioning of 60 KVA UPS with batteries, isolation transformer complete with all accessories and confirming to tender specifications (A+B+C+D)	

Sl. No.	Description of additional Items to be quoted	Rates inclusive of warranty
1	Post Warranty on-site Comprehensive annual maintenance of 60 KVA UPS as % of basic cost of UPS	
2	Service Tax	
	TOTAL AMC Charges for 60 KVA UPS	

SNO.	PARTICULARS	UNIT PRICE (In Rs.)
2.a)	120 KVA On-Line UPS Systems	
i)	120 KVA On-Line UPS System excluding batteries and confirming to tender specifications Make:	
ii)	60/90 minutes battery back-up for 60 KVA UPS using Sealed Maintenance Free Batteries (96000 VAH) and confirming to tender specifications	
iii)	150 KVA Isolation Transformer to be connected at the input of 120 KVA UPS and confirming to tender specifications	
A	TOTAL for 120 KVA UPS including Input Isolation Transformer, SMF Batteries etc. complete with all accessories and confirming to tender specifications	
B	VAT (in %)	
C	Installation & Commissioning Charges	
D	Service Tax on C (in %)	
E	GRAND TOTAL for Supply, Installation and commissioning of 120 KVA UPS with batteries, isolation transformer complete with all accessories and confirming to tender specifications (A+B+C+D)	

Sl. No.	Description of additional Items to be quoted	Rates inclusive of warranty
1	Post Warranty on-site Comprehensive annual maintenance of 120 KVA UPS as % of basic cost of UPS	
2	Service Tax	
	TOTAL AMC Charges for 120 KVA UPS	

Specifications are basic essence of the product: It must be ensured that the offers are strictly as per our specifications. At the same time it must also be kept in mind that merely copying our specifications in their quotation shall not make firms eligible for consideration. A quotation has to be supported with the printed technical leaflet/literature (wherever applicable) and the specifications mentioned in the quotation must be reflected/ supported by printed technical leaflet/literature and also on the company's official website. The deviation in specification, if any, should be clearly indicated by the supplier in his quotation. The supplier should also indicate make / type, No. of the materials offered. Vague terms such as Best Indian, Best Indigenous and Imported make should not be used.

II. Eligibility Criteria

S.No	Requirements	State Yes / no
1	The supplier should be Original Equipment Manufacturer (OEM) of UPS systems or the authorized distributor/dealers of such manufacturers. The supplier should have been in the business of UPS sales, service, implementation & integration related activities for at least past 5 years. Attach documentary evidence	
2	The Suppliers submitting their offer should be ISO 9001 certified from internationally renowned certifying agencies such as DNV / TUV / BVQI / BIS / SGS etc. having worldwide presence. Attach documentary evidence	
3	Suppliers should have past experience of having supplied & serviced minimum of 03 nos. On-line UPS of 60 KVA or higher ratings in the North Eastern States to reputed educational institute or Govt. Institutions/undertakings. Attach documentary evidence	
4	The Suppliers must have past experience in undertaking and having executed at least 03 (three) works of supply of On-Line UPS Systems, each work order individually costing not less than Rs. 10.00 lakhs , in the North Eastern states to reputed educational institute or Govt. Institutions/ undertakings. Attach documentary evidence	
5	Suppliers should be financially sound and capable of executing orders of such magnitude. Bidder must have an average annual turnover of at least Rs. 3.0 (three) crores per year from Sales of UPS and related accessories in the last 03 financial years. Attach documentary evidence	
6	Suppliers must submit necessary certificates in respect of their products qualifying for safety & electromagnetic compatibility tests as the UPS shall be used with sophisticated laboratory and analytical equipment. The UPS should be designed in accordance with, and comply to the following standards: <ul style="list-style-type: none"> • Safety : IEC 62040-1-1 or EN 62040-1-1 • Emission and Immunity: EN 50091-2; EN61000-4-2,-3,-4,-5 • Markings: CE / UL Mark • Environmental: RoHS/WEEE Compliant (compulsory) Failure to submit the same shall lead to disqualification of bid. Attach documentary evidence	
7.	The offered UPS model should have been in existence in India for at least 03 years. Attach certificate from user regarding satisfactory performance since last 03 years.	

III. Other Terms and Conditions:

1. The supply order will be awarded to the vendor based on the merit of the quotation and a suitable procedure adopted by **TRIPURA UNIVERSITY**. The procedure to be adopted for evaluating the quotations shall be final and binding on all the parties.
2. Rates quoted should be on **F.O.R. Tripura University, Suryamaninagar, on DOOR DELIVERY BASIS**.

Tripura Govt. Entry Tax, @4% on the total Invoice value is required to be paid by this Institute; and hence the same will be taken in to account while calculating cost of offers made by vendors whose principal suppliers are located outside the State of Tripura.

3. **Delivery:** Delivery of goods at Tripura University, Suryamaninagar, will have to be maximum within **60(Sixty) days** from the date of receipt of the Purchase Order. If a firm fails to deliver the goods within the stipulated time, penalty deduction will automatically come in to force as per details below:

Up to 01(One) week : ½% of the order value	Up to 02(Two) weeks : 1% of the order value
Up to 03(Three) weeks : 1.5% of the order value	Up to 04(Four) weeks : 2% of the order value

After 4th week of delay, the purchase order may get cancelled.

Force Majeure Clause - If the execution of the contract / supply order is delayed beyond the period stipulated in the contract as a result on out-break of hostilities, declaration of an embargo's or blockage or fire flood, acts of nature or any other contingency beyond the supplier's control, purchaser may allow such additional time by extending the delivery period as he considers to be justified by the circumstances of the case and his decision shall be final, conclusive and binding. If and when additional time is granted by the purchaser, the contract /supply shall be read and understood as if it had contained from its inception the delivery date as extended.

4. **Payment:** 90% payment shall be paid against delivery, installation and satisfactory performance of all items and balance 10% payment will be made maximum **within 30 (thirty) days from the date of successful installation, and acceptance of ordered goods by a duly constituted Inspection Committee**, at **TRIPURA UNIVERSITY** generally through Alc payee cheque. In case payment is to be made by Demand Draft -draft charge will be to the supplier's account.

5. **ANNUAL MAINTENANCE CONTRACT (AMC)** rates are to be clearly specified, failure to which the quotation will not be considered for evaluation.

6. **Currency:** QUOTATIONS ARE TO BE IN INDIAN RUPEES ONLY.

7. **WARRANTY:** Vendors should undertake to provide the Purchaser 2 years unconditional and unlimited, free maintenance service (which will include repair and maintenance of all kits or parts, and supply of spare parts as and when required for smooth functioning of the systems) from the date of installation. The systems supplied should carry 2 years on site / comprehensive warranty from the date of Installation. Date of installation of the ordered equipment will be decided by the Purchaser.

8. The Registration number of the firm along with the CST/VAT No. allotted by the Authorities, as well as PAN number of the firm allotted by the Income Tax authorities should be submitted, failing which vendor's bid would become invalid and same shall be rejected.
9. Tripura University does not bind itself to purchase any / all the quantity and to accept the lowest tender and reserves to itself the right to increase or decrease the quantity.

10. Tripura University reserves the right to choose, accept or reject any or all requests / offers, in full or part at any stage, reduce or increase the quantity without assigning any reasons therefore. The quantity / number shown in the document is only indicative. Tripura University will not be responsible for any postal losses or delays in submission of documents. The tender documents are non-transferable.
11. Suppliers/ Vendors are free to visit Tripura University Campus, if feel so, before they submit their offers
12. All disputes arising in connection with executing the Purchase Order will be subject to the Jurisdiction of the **Courts** in Agartala only.

II. Technical Specification for GCMS SYSTEM

Gas Chromatograph specification:

Multi-tasking operational system. Large (12.5 square inches) LC display with 11 lines of text. Intuitive menu and cursor driven user interface with on-screen help. Sealed modular keypad with soft key function. GC to supports up to 3 injectors (PTV or isothermal split/splitless) with Electronic Flow Controls. EFC power fail kit standard for injector in the front position. GC to supports up to 3 Time-programmable detectors (up to 3) with metering and On/Off gas controls. Easy access pneumatics.

Oven : The system should be flexible enough to support complex multi-valved, multi-column, multi-detector configurations. The system should have LCD display, 8 stored methods, 3 installed detectors, 3 installed injectors, 6 heated zones excluding the column oven.

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|---|---|
| a. Temperature range | : Ambient to +4 ⁰ C to 450 ⁰ C |
| With cryogen | : -99 ⁰ C to 450 ⁰ C |
| b. Number of temperature-programmed ramps | : 24 ramps with 25 isothermal holds. |
| c. Maximum programmable ramp rate | : 120 ⁰ C/min. |
| d. Cool-down rate | : 400 ⁰ C to 50 ⁰ C in 4.5 min. |
| e. Temperature set-point resolution | : 1 ⁰ C |
| f. Maximum temperature ramp rate | : 100 ⁰ C/min for all voltages |
| g. Size: 28cm (w) x 19cm (d) x 28cm (h). | |

Injectors: Maximum provision for 3 (three) operating injectors with Electronic Flow Control, capillary columns from 1 to 250 m. length. Injector should have one autostart switch to automatically activate runs by the syringe so that every run starts immediately when sample is injected.

Capillary Split/Splitless injector: Electronic flow control capable of constant flow or constant pressure (0.1 to 100 psi), Programmable split ratio control, Adjustable septum purge, split/splitless solenoid control, Pressure pulse injection mode and gas saver mode. For fused silica columns 1 to 250 m. length.

Max.temp.limit 450°C.

Programmable Temperature Vaporizing (PTV) injector: operational modes: temperature ramped splitless, cold-on column, large volume injection, split and splitless injection, solid sample introduction probe. Pressure range: 0-100 psi, total flow: 500ml/min at 10psi, temp.range: -99°C to 450°C with liquid N₂, -65°C to 450°C with liquid CO₂, maximum temp.ramp rate: 180°C/min, temp.ramps: 4 (four), split range: 1-10,000 (column dependent).

Autosampler for GC-MS : Consists of 100 vial (2mL) capacity carousel, 10ul Hamilton syringe, 100 x 2ml vials with caps & septa, wash station for 3 solvents, 4x solvent wash bottles, caps, septa, one waste vial

GC Ethernet communications interface with TCP/IP protocol for workstation control. Seven External Powered Events, Run Time diagnostics.

Computer to serve as GC/MS data station with latest configuration.

The software for GCMS should be Windows 95, 98 NT, 2000 compatible.

- Workstation software should be multitasking system controlling all GC and MS Modules like SIS, Full Scan, MS/MS, etc.
- Compatible to Standard Spectral Databases like NIST Standard & Search, Wiley etc.

Low Bleed MS Fused Silica Capillary Columns: CP-Sil 8 CB Low Bleed /MS or DB-5MS or RTx-5 MS, CP-Sil 24 CB Low Bleed/MS or DB-17MS/MS 30M x 0.25mm, df = 0.25 µm.

Mass Spectrometer

The Mass Spectrophotometer must have time programmable EI, CI, MS/MS capabilities. All component of the system must be under computer control

The mass ranges 10-650 amu programmable throughout the analysis.

Scan rate 5600 u/sec

Unit mass resolution over the entire range

Ionisation mode includes EI, CI, SIS (Selected Ion Storage), EI/MS/MS and CI/MS/MS, MSⁿ for SRM (Single Reaction Monitoring) or MRM (Multiple Reaction Monitoring) modes, CID (Collision Induced Dissociation).

The system must offer programmable control from one mode of operation to another within a single analysis, without any hardware change.

The analyser must have pre-aligned electron multiplier which may be replaced by the user without any use of hand tools.

Sensitivity EI: 1 pg of OFN in hexane, 50:1 (S/N)

Sensitivity CI: 5 pg of benzophenone in methanol, 20:1 (S/N)

Chemical ionisation include liquid CI reagent (methane, isobutane, ammonia)

Change over between EI and CI must be possible during the single run. No hardware changes are allowed during the process.

MS/MS software should include time programmable acquisition changes between EI, CI, MS, MS and CI/MS/MS in single analysis.

NIST 08 MS Library and Search Programme.

Selected ion storage facility capable of simultaneous storage of 3 or range of ions and library searchable against standard library like NIST.

Transfer line temperature: independent control, 350°C

Manifold temperature: independent control, maximum 120°C

Analyzer temperature: independent control, maximum 250°C

Vacuum: 70L/sec capacity turbomolecular pump, air cooled and thermostatically protected, to provide a vacuum of approx. 10^{-5} Torr (1.3 mPa) in the manifold.

Power fail protection: in case of power failure during run full protection should be available to protect the capillary column from damage.

Chromatoprobe facility should be available. The sample solid/Liquid must be loaded into a disposable micro vial and inserted into a capillary injector with PTV facility. Sample must be analysed without breaking vacuum. Probe should be designed to function in a programmable injector body.

1. Accessories of GCMS:-

Computer and Printer:

PC and Printer with Software

Pentium – IV, 2GHz 2GB RAM, 120 Hard Disk,
DVD Comb Drive, 17" TFT Monitor, USB ports,
105 keys Keyboard, Scroll mouse, Original
Windows XP Service Pack 3 Software,
Color laser Printer

2. VHP Helium, Hydrogen, Nitrogen, Zero Air Gas Cylinders.

3. Double Stage Gas Regulator for Gas Cylinders

III. Technical Specification for Analytical and Preparative HPLC System

No.	Description	Qty
1.	Quaternary Analytical Pump	1
	Flow Rate Range : 200 – 10,000 μ L/min	
	Flow Rate Accuracy : \pm 0.1% at 1 mL/min	
	Flow Rate Precision : < 0.1% RSD	
	Pressure range : 0.1 – 50 MPa (7250psi)	
	Pressure ripple : typical : < 1 bar or < 1%	
	Proportioning Accuracy : \pm 0.5% at 2 mL/min	
	No. eluent lines : 4	
	Gradient delay volume : 690 μ L	

No.	Description	Qty
2.	Binary Analytical Pump	1
	Flow Rate Range : 0.5-50 mL/min	
	Flow Rate Accuracy : \pm 0.1% at 3 mL/min	
	Flow Rate Precision : < 0.1% RSD	
	Pressure range : 1 – 10 MPa (1450psi)	
	Pressure ripple : typical : < 2 bar or < 1.5 %	
	Proportioning Accuracy : \pm 0.2% at 5 mL/min	
	No. eluent lines : 2	
	Gradient delay volume : 1035 μ L	

3.	Power Cord India Version, 1.8m	5
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4.	Solvent Rack SRD – 3200, 2 degasser channels	1
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5.	Manual Injection Valve Kit, analytical	1
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6.	Manual Injection Valve Kit, semi preparative	1
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7.	Variable Wavelength Detector	
	No. of Channels : 4	
	Detection Type : Double beam forward optics design	
	Wavelength Range : 190nm to 900 nm	
	Wavelength Bandwidth : 8 nm at 254 nm	
	Noise : $< \pm$ 2.5 uAU at 254 nm	
	Drift : < 0.1 mAU/h	
	Light Source : Deuterium lamp	
	Linearity : Up to 2.5 AU	

8.	Analytical flow cell, 11 μL, SST, 10mm Path	
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9	Semi pre flow cell, VWD 3x 00, PEEK, 0.7 μL, 0.4 mm	1
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10.	Acclaim C-18 Analytical Column, 5 µm, 4.6 mm x 250 mm	2
11.	Acclaim C-18 Guard Column, 5 µm, 4.3mm	2
12.	Acclaim Guard Holder and Coupler Kit	2
13.	Chromeleon CHM: 1 Chromeleon Chromatography data system for control, acquisition , processing, & Reporting software	1
14.	Semi Preparative Columns, RP – C18 and others HPLC	4
15.	Normal phase analytical CDS an others	3
16.	Solvent Filtration Kit with Vacuums Pump	1
17.	Semi Preparative column for Normal phase HPLC	2
18.	Sample Filtration Kit	1
19.	PC and Printer with Software Pentium – IV, 2GHz 2GB RAM, 120 Hard Disk, DVD Comb Drive, 17” TFT Monitor, USB ports, 105 keys Keyboard, Scroll mouse, Original Windows XP Service Pack 3 Software, Color laser Printer	1