

## **MAHARSHI DAYANAND UNIVERSITY ROHTAK**

### **TENDER NOTICE**

Sealed Tenders are invited subscribed as "Tender for Equipments" for supply of following Instruments along with earnest money equal to 2% of the quoted rates on the total amount involved in the shape of Bank Draft along with a separate draft of Rs.3000/- as tender fee (Non refundable) in favour of Finance Officer, M.D. University, Rohtak so as to reach the Head Department of Zoology upto 07.01.2013.

The Tenders will be opened on 09.01.2013 at 11.30 a.m. in the Office of the undersigned. Interested supplier may have the detailed specifications and Terms & Conditions from the Department of any working day upto 5.00 p.m. or from University Website [www.mdurohtak.com](http://www.mdurohtak.com)

Registrar

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**NOTE TO BE PUBLISHED IN PRESS** (only for display on website and to supply to the firm).

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### **General Specification (Tentative) of the instruments claimed for the DST-FIST 2011 [187]**

#### **1. CO<sub>2</sub> incubator:**

##### **Specifications for CO<sub>2</sub> Incubator**

Heating method : **Water/Air-Jacketed System** for stable temperature environment  
PID Control plus chamber direct sensing system maintains a high-precision temp environment

Automatic stop mechanism for fan motor and CO<sub>2</sub> valve

Automatic controlled door heater with thorough pursuit of high-precision cultivation

Exterior dimensions (W x D x H) : 770 x 620 x 900 mm

Interior dimensions (W x D x H) : 490 x 505 x 690 mm

Effective capacity : 120 to 200 Litres

Capacity of shelves: Standard 6, max provision for 19 ;Shelf dim.(WxDxH):450 x 450 x 10 mm

Exterior finish : Baked acrylic finish on galvanized steel

Interior finish : Stainless steel (SUS-304) R-corner structure

Door : Baked acrylic finish on galvanized steel with door heater

Inner door : Tempered glass

Insulation : Foamed in-place rigid polyurethane

Humidifying system : Natural vaporization with water in humidity pan (stainless)

Temperature control : PID control (Sensor : Pt 100 ohm)

CO<sub>2</sub> control : ON-OFF Control System, Automatic control (Sensor : Thermistor)

Air circulation system : Gentle air circulation

Temperature range : Ambient temperature plus 5 - 50°C

Temperature controllability : ± 0.1°C

Temperature uniformity : ± 0.2°C (Setting temp. 37°C with Ambient temp. 20°C)

CO<sub>2</sub> range : 0 - 20% volume

CO<sub>2</sub> controllability : ± 0.15% volume

Chamber humidity : More than 95% RH

Power source : Local Voltage AC 50 / 60 Hz, Heater : Cord heater 245 W

Alarm system : Operation sensor temp., CO<sub>2</sub> level, power failure, overheat, water level.  
Alarm notification, continues for 9 hrs in case of power failure (with remote alarming terminal)

CO<sub>2</sub> level : Level deviates from the set level by more than 1%, first digit of digital indication flashes (Upper limit CO<sub>2</sub> valve OFF)

Water level : Electronic lamp notification.

Overheat : Operates at deviation of approx. + 3° lamp notification, heater OFF

Capacity of contact point for remote alarm

Terminal output for remote control recorder : 0 - 100 mV (temperature, CO<sub>2</sub> level)

CO<sub>2</sub> supply joint : Inside dia. 4 - 6 mm tube connection

Sample gas collecting joint : Inside dia. 4 - 6 mm tube connection

Power consumption : 285 W, 230 / 240 V, 50 Hz, 1 Phase  $\phi$ , Net weight : 108 Kg

**UPS 5KW 6-12 hr backup and 01 CO<sub>2</sub> filled and 01 empty gas cylinder**

**Note: Water jacketed system shall be preferred.**

## **2. HPLC**

### **SPECIFICATION FOR HPLC**

#### **1. PUMP**

- ❖ **Complete integrated system**
- ❖ Flow rate : 0.001 to 5ml/min
- ❖ Accuracy : +/- 1% or +/- 2ul /min whichever is larger (at 1ml/min)
- ❖ Pulse less Solvent Delivery (serial double plunger design).
- ❖ Automatic Inlet Valve for flow rate stability and gradient performance
- ❖ Unique Auto purge functions
- ❖ Automatic Drain
- ❖ Automatic Seal wash
- ❖ Flow rate precision: 0.075% RSD.
- ❖ 5 Channel on-line vacuum membrane degasser
- ❖ Reservoir tray, which accommodates six 1 liter bottles and small storage space to keep tools and documents comes as standard.

#### **2. HIGH THROUGHPUT AUTO SAMPLER**

- ❖ Ultra fast analysis – 15 seconds for 10l injections from start to finish-unheard of high-speed sample injections.
- ❖ Carry over 0.01%
- ❖ Can handle up to 350, 1ml vials.
- ❖ Automatic Rack status recognition.
- ❖ Full volume injection – no sample loss.
- ❖ Auto Sampler is with cooler having temperature range from 4 deg C to 40 deg C

#### **3. DETECTOR**

##### **UV-VIS DETECTOR**

- ❖ Baseline Noise:  $0.25 \times 10^{-5}$  au
- ❖ Unique automatic temperature control cell in three modes for stable baseline and better resolution.
- ❖ Built-in mercury lamp for wavelength accuracy.
- ❖ Automatic cell recognition.
- ❖ Simultaneous dual wavelength measurement.
- ❖ Detector linearity through innovative development of highly reliable optical system.

**OR**

**PHOTODIODE ARRAY (PDA) DETECTOR:**

- ❖ The detector must have 2 modes of operation using a variable slit: High Resolution mode at a slitwidth of 1.2nm and a High Sensitivity mode at a slitwidth of 8nm
  - ❖ Wavelength range 190 nm - 800 nm
  - ❖ Photo-diode array detector with 512 elements and an element resolution of 1.2nm/element
  - ❖ The flow cell must be temperature controlled from 5°C to 50°C for better baseline stability.
  - ❖ Wavelength accuracy 1 nm
  - ❖ Light Source D2, W, D2 + W lamps (3 modes)
  - ❖ Noise Level  $< 0.5 \times 10^{-5}$  AU
  - ❖ Linearity of 2.5AU (ASTM method)
  - ❖ It should have automatic wavelength accuracy check at 4 wavelengths (UV & Vis) & wavelength correction
  - ❖ Number of different wavelengths to be monitored & quantitated simultaneously: 8
- It should have a self-aligning mechanism for the light sources and cell to allow alignment-free installation from the front . It must have a leak sensor as safety feature

**4. COLUMN OVEN**

- ❖ Advanced Column management device for providing number of injections, eluent volume and information on previously used mobile phase etc.
- ❖ Holds two 25cm columns.
- ❖ Column Oven can also work from Ambient – 15 to 60 deg C. It means that Our Column Oven is also covering lower temperatures

**5. INTELLIGENT HPLC FUNCTIONS**

- ❖ Automatic system preparation.
- ❖ Automatic start-up, setting method parameters (auto conditioning), auto shut down.
- ❖ With one touch automatically purges each flow line and rinse liquid line for the auto sampler.
- ❖ Automatically recognizes sample rack type, detects vials, flow cell type, solvent leak, lamp cover status, oven status etc.
- ❖ Automatic check of baseline stability.
- ❖ Auto log – maintenance log, operation log, error log, as well as column history automatically recorded.
- ❖ Auto system check and performance check.
- ❖ QC check functions for quality control.
- ❖ Software alteration checks functions.

**6. AUTO VALIDATION**

- ❖ Auto validation tests important parameters such as wavelength accuracy, lamp energy, solvent delivery pulsation, column temperature, absorbance, baseline drift, baseline noise, pressure limit, gradient accuracy is done automatically in approximately 3 hours in gradient mode, to comply with regulations such as GLP, GMP and ISO.
- ❖ Installation qualifications and operational qualifications.
- ❖ Performance check functions can be used for validation of each unit is to be performed independently.
- ❖ System stability tests can be performed on daily basis.
- ❖ Automated sequence control based on the results of system stability tests.
- ❖ Independent audit trail functions for inspection of audits.

## **7. LC SOLUTION WORKSTATION SOFTWARE**

- ❖ Graphical user interfaces an ease of use.
- ❖ Unique wizard functions.
- ❖ Robust data processing functions such as over laying, chromatograms are easily performed.
- ❖ Easy search of data files with long file names.
- ❖ Confirmation of run conditions of LC with status blocks,
- ❖ WORD like report layout function.
- ❖ Summary report function.
- ❖ Multi level security check.
- ❖ 21 CFR Part 11 Compliant.

PC & Printer

UPS of suitable backup of about 30 minutes

**ANALYTICAL COLUMN (C-18 or equivalent) with system**

### **OPTIONAL:**

**1. Automatic Fraction collector**

**2. Additional column**

## **TERMS AND CONDITIONS GOVERNING THE TENDERS FOR THE SUPPLY**

1. Every tender shall be accompanied by the earnest money equal to 2% of the involved value. The earnest money should be deposited through Bank Draft along with separate draft of Rs.3000/- as tender fee (Non refundable) in favour of the Finance Officer, M.D. University, Rohtak, payable at the State Bank of India, Maharshi Dayanand University, Rohtak.
2. The tender received without earnest money or after the due date shall not be entertained except with the special approval of the competent authorities.
3. The supplies shall be executed within the time specified in the supply order which may be extended by the Registrar on other application of the supplier explaining reasons/circumstances due to which time limit could not be adhered to. In the event of the supplier failing to supply the material within time, he shall be liable to pay as compensation an amount equal to one percent or such small amount as the Registrar may decided on the said amount of the contract, for every day that the quantity remains incomplete, provided that the entire amount of compensation shall not exceed 10 percent of the total amount of the contract. An appeal against these orders shall however lie with the Vice-Chancellor whose decision shall be final.
4. In case the contractor backs out of his contract, the earnest money deposited by him shall be forfeited besides any other action as may be considered necessary by the Vice-Chancellor.
5. All the charges including packing, forwarding and installation, taxes and other levies should be specified in the tender. The charges etc. not specified in the tender shall not be paid.
6. The quantity of material/supplies shall be subject to increase or decrease on the tendered rates. This increase or decrease shall be communicated by the University within 30 days of acceptance of the tender.
7. Supplies shall be made as per the schedule and within such time as is indicated in the supply order.
8. 100% payment will be made on receipt and inspection of goods to ensure the specifications and their good condition.

9. The rates accepted by the University shall be applicable up to 31.3.2013 and the supplier shall have to make supply during the period as and when required.
10. The tenders shall be **opened on 09.01.2013 at 11.30 a.m.** by the Purchase Committee in the presence of contractor/supplier and the Committee reserves the right for negotiation thereafter if considered necessary.
11. The Registrar reserved the right to reject or accept any offer without assigning any reasons.
12. All disputes subject to **Rohtak jurisdiction.**
13. Guarantee/warranty of items must be mentioned.
14. **The University stands exempted from the payment of Central Excise Duty/Custom Duty. The rates be quoted keeping that fact in view, Necessary certificate will be provided by the University.**
15. No tender documents will be issued and rates are to be officered on company's letter pad.
16. If a holiday occurs on the opening day, the tenders will be opened on the next working day.
17. The tenders received not in proper sealed cover shall not be considered and will be liable for rejection in a straightway.
18. Rates for each item are to be quoted in a separate letter head and are to be sent in a separate cover.

**REGISTRAR**