



Sri Venkateswara College
(University of Delhi)
Benito Juarez Marg, Dhaula Kuan, New Delhi- 110021
Phone Off: 24112196; Telefax: 011-24118535

ORDER FORM

Dated: 2-3-21

Ref No. SVC/ BT/PR30082/MED/29/1341/2018. Instr./DS-RE/2020-21/I-V

Sealed quotations are invited by Sri Venkateswara College, University of Delhi, Benito Juarez Road, Dhaula Kuan, New Delhi for the procurement of the following equipment for its day to day research. The Technical Specifications of the same are appended herewith.

S. No.	Name of Equipments	Quantity
1	Analytical Balance/ Microbalance	1
2	High Pressure Vacuum Pump	1
3	Low temperature Immersion Cooler/ Bath	1
4	Incubator Shaker	1
5	Rotary Evaporator Apparatus	1

SPECIFICATIONS

1. Microbalance / Analytical Balance

INSTRUMENT REQUIREMENT / SPECIFICATIONS

1. Maximum capacity: 220g
2. Weighing platform dimensions: 90mm
3. Readability: 0.1mg
4. Guaranteed Repeatability: 0.1mg
5. Linearity: 0.2mg
6. Settling time: 2s
7. Sensitivity temperature drift: 2.0 ppm/°C
8. Weight of balance: 4.7kg
9. Resolution: 0.1mg
10. Display: Backlit LCD
11. Applications: Formulation, totalling, dynamic weighing, piece counting, density, percent weighing, check weighing, statistics, dosing, free factor.

Note-

- **Warranty should be 3 years for Microbalance / Analytical Balance with a free 3 year AMC after warranty period including labour and spares.(Mandatory)**
- **Manufacturing firm should have ISO and CE certifications. (Mandatory)**
- **Name and contact information of last 10 installations of the instrument.**

2. High Pressure Vacuum Pump

INSTRUMENT REQUIREMENT / SPECIFICATIONS

1. Voltage: 220v
2. Air Displacement: 350 ltr/ min
3. Maximum vacuum: 0.005mm Hg at close suction
4. Oil charge: 2ltrs
5. Weight: 42kg
6. Motor capacity: 1hp
7. Rotation per minute: 1440
8. Stage: Double stage

Note-

- **Warranty should be 1 year for High Pressure Vacuum Pump and with a free 3 year AMC after warranty period including labour and spares.(Mandatory)**
- **Manufacturing firm should have ISO and CE certifications. (Mandatory)**
- **Name and contact information of last 10 installations of the instrument.**

3. Immersion Cooler/ Bath

INSTRUMENT REQUIREMENT / SPECIFICATIONS

1. Microprocessor temperature controller
2. Audible and visible alarm for temperature and water level.
3. R134a refrigerant
4. With interface to external water bath.
5. RS 485 connector is option which can connect computer to record the parameters and the variations of the temperature.
6. Temperature range: -50~100°C
7. Precision: ±0.2
8. Chamber Volume: 13 L or more
9. Electrical Requirement: 220V/50Hz
10. Pump flux: 8L/min
11. Power Consumption: 3100W
12. Interior dimension: 240x170x200

Note-

- **Warranty should be 3 years for Immersion Cooler/ Bath with a free 3 year AMC after warranty period including labour and spares.(Mandatory)**
- **Manufacturing firm should have ISO and CE certifications. (Mandatory)**
- **Name and contact information of last 10 installations of the instrument.**

4. Incubator Shaker

INSTRUMENT REQUIREMENT / SPECIFICATIONS

1. Should have Large LCD screen to display more data at same time.
2. Should Stainless-steel chamber and platform, easy to clean.
3. Should have Microprocessor controller for temperature and shaking speed with timing function.
4. Should have Self-check function easy to identify problems.
5. Should have smooth start and stop system so as to prevent liquid spillage.
6. Should have Auto-controller of fan speed to prevent damage to the samples.
7. Should have Safety door switch with auto pause operation when door is opened.
8. Should have High effective filter which should provide filtration of bacteria and dust.
9. Should have option for Temperature-limiting Alarm, auto switch off when over temperature.
10. Should have option for RS485 Connector can connect computer record and inspect the parameters and the variations of temperature.
11. Temperature Range: RT+ 5~65°C
12. Temperature Resolution: 0.1 °C
13. Platform Size: 350x350
14. Interior Height(H, mm): 270
15. Exterior Dimension(W x H x D)mm: 490x450x690
16. Should have Capacity: 4L
17. Should have Convection: Forced Convection
18. Should have Shaking Speed Range: 40~250rpm
19. Speed Accuracy: ±1rpm
20. Amplitude: 20mm
21. Universal Clamp: Standard
22. Timing Range: 1-5999 mins
23. Electrical requirement: AC220V/50HZ
24. Power Consumption: 650W
25. System should have Unique air flow technology which Adopts continuous flow fan technology(cross flow fan), air stability, no turbulence, temperature is uniform;
26. Should have Brushless DC motor; large start torque, wide speed adjustment, and free maintenance.
27. Should have below Safety features
28. Protection on instruments: Comply international standard secondary temp, limiter alarm system, alert the operator with sound and light alarms, ensure operator is safe without any accident.
29. Protection on key components: Key components have over current, over temp., over load etc safety protection; it can prevent instruments accidents without precautions.
30. Protection on samples: Working chamber temperature higher or lower the set temp., alarm starter cut down the heater, alert the operator with sound and light alarms.
31. Protection on operator: Cabinet and door is special designed for insulation, low heat of cabinet body, ensure operator use instrument without burnt.
32. Breakdown message provided: When the instrument breakdown, the breakdown messages show on the screen to help operator easily check.

Note-

- Warranty should be 3 years for Shaking Incubator with a free 3 year AMC after warranty period including labour and spares.(Mandatory)
- Manufacturing firm should have ISO and CE certifications. (Mandatory)
- Name and contact information of last 10 installations of the instrument.

5. Rota Vacuum Evaporator with Vacuum Pump & Chiller*

i. Rota Vacuum Evaporator

INSTRUMENT REQUIREMENT / SPECIFICATIONS

1. Rotation Speed up to 280 RPM, Vertical condenser with Condenser surface area of 2200 cm² or more.
2. It should have integrated control panel with digital LCD display in front of main machine to control and adjust rotation and heating temperature.
3. Convenient Motor Lift or Hand lift model.
4. There should be standby function and residual heat warning at heating bath temperatures above 50°C.
5. There should be the standby button to stops all functions and, when using a motor lift model, lifts the evaporating flask from the heating bath.
6. There should be two separate knobs with dynamic control for setting the rotation speed and heating bath temperature.
7. The Accidental changing of the values can be prevented by the lock function & the locking function of the knobs prevents unintentional adjustment of the values.
8. There should be ground-free condenser design with grease-free threaded connections.
9. There should be highly resistant and particularly durable PTFE vacuum seals that can achieve maximum tightness and reduce expenses for spare parts in the long run.
10. Universal Heating bath temperature of 20-210 Degree Centigrade or wider range starting from 20 degree C
11. Bath Temperature Accuracy $\pm 1^{\circ}\text{C}$.
12. Heating bath should accommodate 5 litre flask as a standard and allows for 200mm horizontal extension.
13. Heating bath should have safety handles and drain spout available.
14. Heating bath should have cut-off at 5 Degree Centigrade over set temperature and Secondary over temperature cut-off of 250 Degree Centigrade.
15. Rotation Speed: 10-280 RPM
16. Should have Stand with clamp to support condenser as a standard supply
17. Should be supplied with pump condenser and woulff bottle
18. Should have Integrated clamp to hold evaporating flask
19. All parts which are in contact with the media should consist of GRAPHITE filled PTFE Vacuum seal.
20. Should have vapour tube with sleeve to add more strength and easily removable from the drive.

21. The control panel should be in accordance with IP 42 to protect electronics control panel from water splash and the optional extension cable to allow placing the control panel outside closed laboratory hoods.
22. To prevent short circuits and corrosion, the cable coupling should comply with the protection class IP 67 or better.

ii. Vacuum pump with digital vacuum controller
INSTRUMENT REQUIREMENT / SPECIFICATIONS

1. Chemical resistant Two-stage Diaphragm pump
2. Suction capacity should be 2 m³/h or more.
3. Ultimate vacuum should be 7 mbar or better.
4. Digital Vacuum controller complete with integrated ceramic vacuum sensor, regulation valve and venting valve with wall-plug power supply.
5. Manual Vent button to prevent bumping
6. Graphs in order to display the entire vacuum process
7. RS 232 interface
8. Vacuum sensor: Integrated
9. Ambient temperature range (operation): 10 – 40 °C
10. Maximum media temp. for continuous operation / short times: 40/80 °C
11. Material of outer housing: Robust plastic housing with good chemical resistance
12. Protection class: IP 20/IP 21
13. Protection class -Residue pump: IP 42 or better

iii. Chiller
INSTRUMENT REQUIREMENT / SPECIFICATIONS

1. Microprocessor temperature controller with audible and visible alarm for temperature and water level.
2. With interface to external water bath.
3. Temperature Range: -10~100°C
4. Precision: ±0.2 or better
5. Chamber Volume should be 4L or more.
6. Pump flux: 8L/min or better
7. Cooling Capacity at 20°C: 800W or better

Note-

- Warranty should be 3 years for Rotary evaporator, vacuum pump and chiller with a free 3 year AMC after warranty period including labour and spares. (Mandatory)
- Manufacturing firm should have ISO and CE certifications. (Mandatory)
- Name and contact information of last 10 installations of the instrument.

It is to be informed that the procedure given below is strictly followed while submitting the tender; otherwise the tender shall be liable for rejection.

1. The quotations should be sent under sealed cover addressed to "Dr. Deepti Sharma, Department of Chemistry, Sri Venkateswara College, Dhaula Kuan, New Delhi-110021 latest by 9th March, 2021
2. The title "Quotation for Analytical Balance or Microbalance/ High Pressure Vacuum Pump/ Low temperature Immersion Cooler or Bath/ Incubator Shaker/ Rotary Evaporator" should be written on the top of the envelope.
3. The sealed quotation should include a Technical Bid and a Financial Bid in two separate envelopes as per the formats given in Annexure I and Annexure II respectively.
4. The quoted price should be inclusive of all the taxes and other charges.
5. Terms and conditions for the AMC will be as per Delhi University/ Govt. of India guidelines/ Conventions, or applicable from time to time.
6. Detailed T&C shall be executed with the approved vendor, upon finalization of the process.

Dr. Deepti Sharma

Project Investigator
DBT Project No. BT/PR30082/MED/29/1341/2018

C. Shula Reddy
Principal 2/3/2021

PRINCIPAL
Sri Venkateswara College
(University of Delhi)
Dhaulta Kuan, New Delhi-110021

ANNEXURE I**TECHNICAL BID**

1.	Name of the Firm	
2.	Address of the Firm	
3.	Registration no.	
4.	Name of the Authorized signatory with Designation	
5.	Specimen signature of the Authorized signatory	
6.	Telephone No. of the authorized signatory and the other Telephone numbers of the Firm	
7.	List of copies of relevant documents	
8.	Details of the Departments/ Organizations etc. in which the firm is engaged in/ instrument is installed in the last five years.	
9.	Has the firm being black listed by any client? If yes then please provide the details.	
10.	PAN/ TAN no. (photocopy)	

ANNEXURE II**FINANCIAL BID**

1.	Name of the Firm	
2.	Address of the Firm	
3.	Registration no.	
4.	Name of the Authorized signatory with Designation	
5.	Specimen signature of the Authorized signatory	

6.	Telephone No. of the authorized signatory and the other Telephone numbers of the Firm	
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S. No.	Specifications	Make	Unit Price	Total Price
Taxes				
Grand Total Price (CIF Delhi)				