The Department of Chemical Engineering invites quotation for lyophilizer / freeze dryer and other essential accessories for working configuration with following specification.

- Should be an upright compact floor-standing / bench top lyophilizer capable of drying mixtures with low eutectic point for research purposes.
- Should be a complete drying unit with vacuum drum, gasket, and all the control instruments.
- Should have condensing capacity of 3-4 litres with condensing temperature of at least -40°C.
- Should have Microprocessor based digital temperature controller for measurement of temperature and electronic digital vacuum indicator.
- Should have chemical resistant direct drive rotary vane / diaphragm vacuum pump capable with displacement of greater than 95 Litres per minute with ultimate vacuum of $1.0 - 3.0 \times 10^{-3}$ mbar, equipped with inlet and exhaust mist filters.
- Vacuum drum should have provision for a manifold with at least 6 ports for attachment of flasks, vials and ampoules.
- Vacuum drum should be constructed of stainless steel non-magnetic grade or Perspex with Perspex lid.
- Should have stainless steel condenser for easy cleaning, longest life and faster freeze drying.
- Should have high performance refrigeration system with eco-friendly refrigerants with minimum of 2 year refrigeration warranty.
- Should have user friendly control system for releasing vacuum hot gas defrosting, vacuum on, selection button manual or automatic run.
• Should have an in-built user-friendly digital display system for showing operation settings, user settings, alarm messages, vacuum and temperature graphs with PC control.
• Should have audible and visual alarms to alert power failure and maintenance / service due time.
• Should have valves to protect air-suction and oil-back suction in to system and to prevent breakage of vacuum and to control vacuum based on eutectic point.
• Should run at single phase, 230 volts, 50Hz power supply.

**Other accessories:**
• Essentials accessories such as glass flasks [50-200 mL (Qty: 2) 500-600ml (Qty: 2) – 1000-1500mL (Qty: 2)], ampoules of 3-7ml (Qty: 100), other glass containers, bottles, vials, tube holders, tray drying shelves, connector tubings, vacuum hose, plastic plugs, knobs, and spare parts for vacuum pump, if needed, should be quoted.
• Stabilizer should also be quoted.

• **Warranty:** A comprehensive on-site warranty for 3 years (including the spare parts and labor charges) should be provided.

**Terms and conditions**
• The technical and commercial bids must be submitted in separate sealed envelopes subscribed with “Technical Bid” or "Commercial Bid" as appropriate. Both the technical and the commercial bids should be enclosed in an envelope subscribed "Quotation for Lyophilizer /Freeze Dryer" and should be submitted to the undersigned.
• The supplier must be an authorized dealer/distributor of the principal/manufacturer and should furnish an authorization certificate from the principal/manufacturer. Quotations without authorization certificate will be rejected.
• A copy of order enlisting the Indian agent with Department of Expenditure, Ministry of Finance should be enclosed.
• CIF New Delhi prices should be quoted with all the terms and conditions i.e. applicable taxes, installation, warranty and delivery schedule.

• Quotations must be valid for at least three months from the date of the NIQ.

• The supplier should provide a list of institutions in India with the details of the syringe pumps supplied and with the contact details of the institution/department.

• A special discount/rebate wherever admissible keeping in view that supplies are being made for educational purpose in respect of public institution of national importance may please be indicated.

• The institute reserves right to accept or reject any or all quotations without stating the reasons thereof.

• The quotations should reach Dr. Sanat Mohanty, Block-II, Room-273, Chemical Engineering Department, Indian Institute of Technology-Delhi, Hauz Khas, New Delhi 110016 latest by 5.00 pm on 26th November, 2012

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