

UNIVERSITY OF DELHI SOUTH CAMPUS
Centre for Innovation in Infectious Disease Research, Education and Training (CIIDRET)

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E-tender Notice

Ref. No. : UDSC/CIIDRET/VKC/2018/006

July 27, 2018

Tenders are hereby invited in two-bid system (Technical & Financial) from manufactures or their authorized dealers for the supply (through sea freight in case of direct import) of **High speed floor model refrigerated centrifuge (Equipment A; One Qty. with accessories), ultra-low temperature freezer (Equipment B; Three Quantities with accessories), A2 type biological safety cabinet (Equipment C; One Qty. with accessories), and water-jacketed CO2 incubator (Equipment D; One Qty. with accessories)** with the specifications given below:


Equipment A: High speed floor model refrigerated centrifuge (One Qty with accessories)

- A1. The centrifuge should have capacity for centrifugation of **up to 6-liter volume using a fixed angle rotor** and up to 4-liter volume using a swinging bucket rotor.
- A2. The same centrifuge should be able to **allow centrifugation at speeds to up to 100,000 x g** with a speed control accuracy of ± 25 rpm.
- A3. The centrifuge should allow automatic locking and instant identification of rotors and a simple quick push-button rotor exchange mechanism to automatically lock the rotor onto the drive adapter, eliminating the need for a tool or to hand tighten.
- A4. The centrifuge should have a brushless, high frequency direct drive.
- A5. The centrifuge should be compatible with light-weight, **corrosion-resistant carbon fiber rotors** allowing centrifugation of 6 x 1 L bottles, 40 x 50 mL conical tubes (swinging bucket), and up to 24 microplates (swinging bucket) per run.
- A6. The centrifuge should be able to tolerate an imbalance of up to 5 % of the opposing loads.
- A7. The centrifuge should be equipped with micro-processor-based touch screen display for easy operation even with gloves along with provision to create password protected multi-user login IDs and save up to 120 programs.
- A8. The centrifuge must have a partial vacuum system, with an optional HEPA filter. There should be an option to run the machine without the use of partial vacuum for centrifugation of sensitive samples.
- A9. The centrifuge should have provision to allow acceleration and deceleration at different speeds and should have a run time for up to 99 hours.
- A10. The equipment should allow logging of the runs and should allow fetching of the logs via a USB drive or Ethernet-based connections.
- A11. The system should be compatible with real time monitoring of the runs using smart phones.
- A12. The equipment should allow centrifugation between a temperature range of -20°C to 40°C with a temperature accuracy of $\pm 2^{\circ}\text{C}$.
- A13. The refrigeration system should be based on CFC/ HCFC free chemistry.
- A14. The system should operate with a power supply of 200-240 V, 50 Hz, 30 A, single phase.

- A15. The centrifuge must have an energy savings mode ("sleep mode") to reduce power consumption up to 15 % by turning itself off if idle for a certain period of time.
- A16. The centrifuge must satisfy cULus and CE safety requirements without being bolted to the floor, to provide flexibility to relocate within the facility.
- A17. The same centrifuge should be accompanied with 1 Qty. of a light-weight, carbon fiber-based, non-corrosive fixed-angle rotor allowing centrifugation of 6 x 1000 ml volume at speed of up to 9,000 rpm (at least 17,500 x g) and 36 Qty of compatible PP-CO bottles.
- A18. The same centrifuge should be accompanied with 1 Qty. of a light-weight, carbon fiber-based, non-corrosive fixed-angle rotor allowing centrifugation of 6 x 500 ml volume at speed of up to 12,000 rpm (at least 24,000 x g) and 72 Qty of compatible PP-CO bottles.
- A19. The same centrifuge should be accompanied with 1 Qty. of a light-weight, carbon fiber-based, non-corrosive fixed-angle rotor allowing centrifugation of 6 x 250 ml volume at speed of up to 14,000 rpm (at least 30,000 x g) and 72 Qty of compatible PP-CO bottles.
- A20. The centrifuge should be accompanied with 1 Qty. of a light-weight, carbon fiber-based, non-corrosive fixed-angle rotor allowing centrifugation of 12 x 50 ml volume at speed of up to 20,000 rpm (at least 51,400 x g) and 150 Qty of compatible PP-CO bottles.
- A21. The centrifuge should be accompanied with 1 Qty. of a light-weight, titanium-based, fixed-angle rotor allowing centrifugation of 8 x 50 ml volume at speed of up to 29,000 rpm (at least 100,000 x g) and 150 Qty of compatible PP-CO bottles.
- A22. The centrifuge should carry 5-years comprehensive warranty on all parts and labour. The carbon fibre rotors should carry 15 years warranty and the titanium rotor should carry 5 years warranty.
- A23. Models No of the Centrifuge and catalogue nos of Rotors and tubes should be mentioned.
- A24. Copy of the detailed price bid (showing details of the quoted items) **without prices** should be uploaded as part of the technical bid.
- A25. Provide name and contact details of three locally (NCR) resident Electronic, Refrigeration and mechanical engineers employed with the tenderer.
- A26. Provide list of at least three installations with user name and contact details of the same or similar machine as quoted.

Equipment B: Ultra-low temperature freezer (Three Qty. with accessories)

- B1. The freezer be upright with **approximately 370 litre capacity** and two 1 horsepower compressors with cascade system to maintain -86°C under Indian Laboratory condition maintained at 28-30°C.
- B2. **Exterior dimensions should not exceed 33.3 (W) x 77.9 (H) x 32.9 inches (D) (84.6cm x 197.9cm x 83.6cm) and interior dimensions should not exceed 23.0 (W) x 51.5 (H) x 19.3 (D) (58.4cm x 130.8cm x 49.0cm).**
- B3. The freezer must have stainless steel interiors **with 5 inner compartments** with adjustable solid stainless steel shelves and five separate inner doors.
- B4. **The freezer must have capacity to accept 4 adjustable side access racks per shelf and dimension of each rack should not exceed 11.6 x 5.4 x 16.5 inch and should be able to accommodate 12 boxes of 2" height in 4x3 (HxD) configuration.**
- B5. The freezer should have latch and handle for ergonomic handling and one hand operation with padlock capability.
- B6. The refrigeration system of the freezer should be based on Non-CFC refrigerants.
- B7. The freezer should have exterior body made of heavy gauge durable steel with powder coated paint finish.
- B8. The freezer must have at least 5 inches non-CFC foamed-in-place polyurethane insulation and at least 4.5 inches in the door.
- B9. The freezer should have Triple-sealing silicone door gasket.


 निदेशक / Director
 नवप्रवर्तन केंद्र, संक्रामक रोग अनुसंधान, शिक्षा और प्रशिक्षण
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- B10. The freezer should have a Down-feed evaporator.
- B11. The freezer should have two 10 inches tube axial fans to provide maximum cooling of the compressor housing.
- B12. The freezer should be equipped with heavy-duty dual wheel swivel locking casters.
- B13. The freezer should have automatic voltage compensator to respond to high and low voltages.
- B14. The freezer should allow front to back airflow with easily removable and washable air filter.
- B15. The freezer should have service valves for easy recovery of refrigerants and field servicing.
- B16. The freezer should have hinged grill swing out door in front for easy access to air filter and battery
- B17. The freezer should have a vacuum relief port for easy re-opening after initial door openings.
- B18. The freezer should have 4" open x 12" long heavy duty hinge for ensuring positive closure and uninterrupted service.
- B19. The freezer should be equipped with a microprocessor controller to monitor temperature in one degree C increments, with push button type eye-level digital display.
- B20. The temperature probe must be positioned to insure the alarm sounds before the stored product can be affected by a rise in temperature.
- B21. The freezer must be equipped with battery back up for the alarm monitoring system and should have both visual and audible alarms to alert operator of over and under temperature, power fail, door ajar, and low battery conditions.
- B22. The freezer should include dry contacts for connection to optional remote alarms.
- B23. The freezer must be US-FDA Certified and a copy of the Certificate must be attached.**
- B24. The Freezers should carry 5-years comprehensive warranty on all parts and labour.
- B25. Models No. of the Freezer should be mentioned.
- B26. Copy of the detailed price bid (showing details of the quoted items) **without prices** should be uploaded as part of the technical bid.
- B27. Provide name and contact details of three locally (NCR) resident Electronic, Refrigeration and mechanical engineers employed with the tenderer.**
- B28. Provide list of at least three installations of the same or similar machine as quoted and provide performance certificates from the users who purchased same or similar freezers in the last 24 months. The certificate should mention that the freezers are maintained at -80°C during the period of installation without any breakdown.**

Equipment C: A2 type biological safety cabinet (One Qty. with accessories)

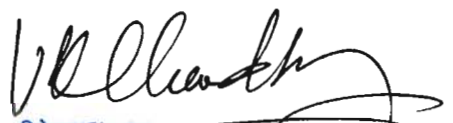
- C1. The biological safety cabinet shall be of Class II A2 classification, 6 Feet work space suitable for use in Cell culture/microbiology applications in safety levels 1 to 3, and should be certified from international standards NSF/ANSI 49 and DIN 12980 with no deviation from the certification.
- C2. The cabinet should be **operated through remote control** for opening the front window, switching on/off of the air flow, UV lights etc.
- C3. The cabinet should have **easily cleanable and autoclavable scratch-resistant, removable stainless steel working surface with two 30 cm segment, and one 120 cm segment.**
- C4. The dimensions of the cabinet should be 6 foot - **Exterior: ~75.0 x 63.0 x 32.0** inches and Interior: ~71.0 x 31.0 x 25.0 inches.
- C5. The safety cabinet must have an aerosol tight, electrically driven front window made of laminated safety glass that seals the inner chamber for secure protection from contaminants.
- C6. The cabinet should have negative pressure sidewall plenums to prevent leaks to outer environment.
- C7. The cabinet should have stainless steel interiors with all metal plenums.

- C8. The cabinet should have stand by mode to reduce airflow to during low-usage periods.
- C9. The cabinet should incorporate HEPA filters for supply and exhaust air, providing efficiency of 99.995%.
- C10. The cabinet should have a programmable powerful timed crossbeam UV-irradiation on both sidewalls to illuminate the entire working area without causing shadows.
- C11. The cabinet should have removable and autoclavable arm rests specially designed to prevent front air ducts from becoming obstructed during operation by a user's arms, and adjustable to enhance ergonomics for the specific user maximizing comfort and safety.
- C12. The cabinet should be supplied with fixed height floor stand with 750 mm working height.
- C13. The cabinet must feature both visual and audible alarm functions to indicate discrepancies in operating conditions relative to the parameters of inflow and down flow air movement and window placement, to maximize user safety.
- C14. The cabinet should also have the digital control with display placed on back wall of the work chamber.
- C15. The cabinet must run using the brushless DC motor technology that should not consume more than 300 watt.
- C16. **The cabinet will have to be connected to exterior through a hard duct with controlled exhaust fan if required due to backpressure as the length of the duct is expected to be about 6 ft. The cost of ducting is not to be included** but any connecting box or other accessory if required should be included.
- C17. The biosafety cabinet should carry 5-years comprehensive warranty on all parts and labour except filters.
- C18. Models No. of the Biosafety bench and Part No. of essential accessories including those in C.3 and C.16 should be mentioned.
- C19. Copy of the detailed price bid (showing details of the quoted items) without prices should be uploaded as part of the technical bid.
- C20. Provide name and contact details of two locally (NCR) resident Electronic and mechanical engineers employed with the tenderer.**
- C21. Provide list of at least three installations with user name and contact details of the same or similar machine as quoted.**

Equipment D: Water-jacketed CO2 incubator (One Qty. with accessories)

- D1. The incubator should be water-jacketed with a capacity of approx. 185 Litres and should be based on an easily stackable design without need for any accessory for stacking.
- D2. The exterior dimension should not exceed 26.0 (W) x 39.5 (H) x 25.0 (D) inches (i.e. 66.0cm x 100.3cm x 63.5cm) and the interior dimensions should not exceed 21.3 (W) x 26.8 (H) x 20.0 (D) inches (i.e. 54.1cm x 68.1cm x 50.8cm).
- D3. The water jacket should surround the sides, back, top, and bottom of incubator chamber to ensure temperature stability, especially during power cuts.
- D4. **The inner gasket of the incubator should be removable and easily cleanable.**
- D5. The incubator should have Non-CFC foam insulation on the outer door.
- D6. The incubator should have **built-in heated inner glass door** to provide quicker recovery to uniform temperature after door openings and minimized condensation on the glass.
- D7. The incubator should have field reversible inner and outer doors so that incubator can be easily configured for use anywhere in the lab.
- D8. The incubator should come with **polished stainless steel interiors with fully coved corners** for easy cleaning.

- D9. The incubator should have 4 easily removable stainless steel shelves and a removable humidity pan for keeping water.
- D10. The incubator should have a working temperature range of + 5°C to 55°C with an accuracy of +1°C
- D11. The incubator should be able to maintain a Temperature Uniformity of $\pm 0.2^\circ\text{C}$ at 37°C.
- D12. The incubator should be operational between the CO₂ ranges of 0-20 % with CO₂ control better than $\pm 0.1\%$.
- D13. The CO₂ sensing technology should **be based on thermal conductivity sensors** and should allow setting and reading of CO₂ levels at increments of 0.1 %.
- D14. The incubator should have programmable alarm system for deviations in temperature, CO₂ levels, and humidity levels, etc.
- D15. The incubator should be able to sustain relative humidity levels of up to 95%.
- D16. The Incubator should have fan-assisted HEPA filtered airflow system in the chamber producing Class 100 chamber air quality within 5 min of door closing. The HEPA filter should be replaceable and located inside the incubator chamber for optimum filtering, easy access, and simple replacement (without any tools).**
- D17. The incubator should have built-in preventive maintenance system with adjustable timer to notify user when to replace the filter.
- D18. All probes and sensors should be located inside the chamber of the incubator for precise control and reporting of different parameters.
- D19. The incubator should have Microprocessor control/monitoring system with touch screen-based displays for temperature, CO₂, and alphanumeric message center**, which is easy to read, easy to program and allows tracking and changing of different parameters. This should also automatically maintain the logs of all the interactions with incubator.
- D20. The incubator should have microbiological filters on all the gas inlets and outlets and sample ports to reduce the potential contamination sources.
- D21. The incubator should have automatic electronic start up and automatic CO₂ auto-zero facility for easy start up and use.
- D22. The incubator should be UL listed and CE marked.
- D23. The CO₂ incubator should carry 5-years comprehensive warranty on all parts and labour.
- D24. The incubator should come with 12 HEPA filters and 30 inline filters.
- D25. Models No. of the incubator should be mentioned.
- D26. Copy of the detailed price bid (showing details of the quoted items) **without prices** should be uploaded as part of the technical bid.
- D27. Provide name and contact details of two locally (NCR) resident Electronic and mechanical engineers employed with the tenderer.**
- D28. Provide list and contact details of at least three installations of the same or similar machine as quoted and provide performance certificates from the users who purchased same or similar CO₂ incubators in the last 24 months.**



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Terms and Conditions:

1. The tenderers are requested not to attach any additional paper more than requested in the terms and conditions.
2. The University of Delhi South Campus reserves the right to procure all, some, or only one component of the system or not to buy anything.
3. The University of Delhi South Campus reserves the right to amend the contents of the tender 3 days before the closing date, therefore, prospective tenderers should check the e-procurement website (<https://eprocure.gov.in>).
4. The bids should be uploaded on to the e-procurement website (<https://eprocure.gov.in>) within 21 days of the date of the advertisement (latest by 17th August 2018). The Bidders/Vendors are advised to follow the instructions provided in the 'Instructions for Online Bid Submission' for the e-submission of the bids online through the Central Public Procurement Portal for e-Procurement at <https://eprocure.gov.in/eprocure/app>.
5. Quotations have to be submitted in two bid systems (Technical and financial). The First part 'Technical bid, should consists of all technical details and supporting documents with terms and conditions. A compliance sheet (in the attached format; Annexure I) must be filled by the vendor against each point and giving reference of the same (page no., line no.) in the supporting company brochure/document. **The technical bid should contain a copy of the format of the price bid along with the model number and part numbers of quoted equipment and accessories "without prices."**
6. The second part 'Financial bid', should contain item-wise pricing of items and/or consolidated pricing as per items listed in the technical bid. The Financial Quotations should contain price of the equipment, discount if any, packaging and forwarding charges, air freight and insurance charges (in the attached format; Annexure II). The price quoted should be F.O.R destination price in INR/USD/Euro against customs duty exemption certificates/GST exemption certificates would be provided by the buyer and inclusive of standard installation.
7. The applicable taxes/duties should be mentioned at the current prevailing rates keeping in view the current exemptions for the University of Delhi.
8. Authorization certificate from the manufacturer should be attached/uploaded. The certificate should indicate about the responsibility during the warranty period. The certificate should also indicate about the responsibility of the OEM during the warranty period in case there is change in the authorized distributor/agent/subsidiary.
9. The equipment will be used for teaching and basic research in the University of Delhi. Maximum special discounts/rebates should be given.
10. The price bids shall remain valid for a period of 90 (ninety) days from the date of opening of technical bid. Delhi University reserves the right to reject a bid valid for a period shorter than 90 days as non-responsive without any correspondence.
11. The delivery period should be within 3 months from the date of receipt of order **including the shipping by sea freight**. Bids offering delivery period beyond stipulated time period may be treated as non-responsive and will be summarily rejected. Permission should be sought for delay beyond abovementioned period.
12. **Manual bids shall not be accepted. Do not submit manual bids by hand.**
13. Payment will be made by electronic transfer as per RBI rules within 30 days of satisfactory installation of the equipment by the supplier/the manufacturing company. The supplier/OEM will be responsible for the installation and providing service and maintenance support during the warranty period.
14. **The venders can quote for individual components. The technically compliant tenders for each item will be compared for price offered and the appropriate tenderer offering the best price for one equipment or for more than one or some or all the equipment (with special pricing for bundle) will be selected in a manner that the University buys all equipment at the best price.**


निदेशक/ Director
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15. **The institute reserves the right to order equipment with better quality and suitability over lower price and to accept or reject any or all quotations without assigning reasons thereof. The tender may also be cancelled without providing reasons.**
16. EMD of Rs. 56,000 (Fifty-six thousand only) for those quoting equipment A (**High speed floor model refrigerated centrifuge**), Rs. 27,000 (Twenty-seven thousand only) for those quoting equipment B (**Ultra-low temperature freezers- Three**); Rs. 18,000 (Eighteen thousand only) for those quoting equipment C (**A2 type biological safety cabinet**); Rs. 9000 (Nine thousand only) for those quoting equipment D (**Water-jacketed CO2 incubator**) or **additive amounts (in one bank instrument) for those quoting more than one or all the four equipment** should be deposited in the form of bank draft /bankers cheque/Bank Guarantee drawn on a schedule bank in India payable to "Director, UDSC" at New Delhi, in a sealed cover with tender number mentioned and without any additional papers to Professor Vijay K Chaudhary, Director, CIIDRET, University of Delhi South campus, First Floor Engineering Department Building, New Delhi-110021 before the end date and time of bid submission. The validity of bank draft /bankers cheque/ Bank Guarantee should be for Six months from the date of submission. The tender without EMD (original hard copy) will not be considered. Bidder, however, has to also attach scanned copies of EMD proof along with their e-tender.
17. Unsuccessful tenderer's earnest money will be returned to them **without any interest**, after expiry of the tender validity period, but not later than thirty days after conclusion of the resultant contract. Successful tenderer's earnest money will be returned without any interest, after receipt of performance security from that tenderer.
18. Earnest money of a tenderer will be forfeited, if the tenderer withdraws or amends its tender or impairs or derogates from the tender in any respect within the period of validity of its tender or if it comes to notice that the information/documents furnished in its tender is incorrect, false, misleading or forged without prejudice to other rights of the purchaser. The successful tenderer's earnest money will be forfeited without prejudice to other rights of Purchaser, if it fails to furnish the required performance security within the specified period.
19. Within fifteen (15) days from date of the issue of notification of award by the Purchaser/Consignee, the supplier (successful tenderer), shall furnish performance security to the Purchaser/Consignee for an amount equal to five percent (5 %) of the total value of the contract, valid up to sixty (60) days after the date of completion of all contractual obligations by the supplier, including the warranty obligations, initially valid for a period of minimum 62 months from the date of Notification of Award.
20. The Performance security shall be denominated in Indian Rupees. It shall be in any one of the forms namely, Account Payee Demand Draft/Bankers cheque (for Delhi) or Fixed Deposit Receipt drawn from any Scheduled bank in India or Bank Guarantee issued by a Scheduled bank in India, in the prescribed form in favour of the **Director, University of Delhi South Campus**. The validity of the Fixed Deposit receipt or Bank Guarantee will be for a period up to sixty (60) days beyond Warranty Period. This period will be extended if the duration of Warranty is extended due delayed repair of the machines.
21. In the event of any failure /default of the supplier with or without any quantifiable loss to the government including furnishing of consignee wise Bank Guarantee for CMC security as per Proforma, the amount of the performance security is liable to be forfeited.
22. In the event of any amendment issued to the contract, the supplier shall, within fifteen (15) days of issue of the amendment, furnish the corresponding amendment to the Performance Security (as necessary), rendering the same valid in all respects in terms of the contract, as amended.
23. **CMC (labor and parts) beyond 5 years of original warranty mentioned above should be quoted in the offer.** This CMC should be quoted for each year and to be paid in 6 monthly instalments. The quoted price structure may be a criterion for price comparison and unrealistically high cost may lead to non-consideration of the whole offer despite being L1. However, the buyer is not obliged to go for CMC beyond initial 5 years. **At the time of offering the CMC beyond initial 5 years, the supplier may quote a new price of this additional CMC in foreign currency/Indian Rupee, which could be lower than quoted in the original tender.**
24. The supplier shall approach the purchaser for getting into additional Annual Comprehensive Maintenance Contract (beyond initial 5 years), 3 (three) months prior to the completion of original Warranty Period. The new CMC will commence from the date of expiry of the Warranty Period. However, the buyer is not obliged to go for warranty beyond initial five years.


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25. The Purchaser/Consignee will release the Performance Security without any interest to the supplier on completion of the supplier's all contractual obligations including the warranty obligations. However, in case buyer decides to go for CMC cover beyond initial five years, the same will be released after the receipt of performance security in the form of Account Payee Demand Draft/Bankers cheque (for Delhi) or Fixed Deposit Receipt drawn from any Scheduled bank in India or Bank Guarantee issued by a Scheduled bank in India, in the prescribed form for CMC security cover (beyond initial 5 years) in favor of **Director, University of Delhi South Campus**.
26. Breakdown penalty: The breakdown of the equipment should be attended within 24 hours of the call and to be fixed in maximum 72 hours beyond which the time (days) taken for the repair will be added to the warranty period.
27. For any query and clarifications, please contact Professor Vijay K Chaudhary, Director, CIIDRET, University of Delhi South campus at vkchaudhary@south.du.ac.in.



Professor Vijay K Chaudhary


Director, CIIDRET

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Annexure I

Format for technical compliance for the supply of High speed floor model refrigerated centrifuge (Equipment A; One Qty. with accessories), ultra-low temperature freezer (Equipment B; Three Quantities), A2 type biological safety cabinet (Equipment C; One Qty. with accessories), and water-jacketed CO2 incubator (Equipment D; One Qty. with accessories)

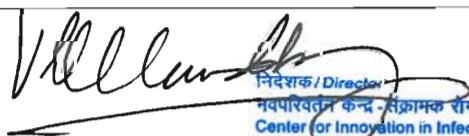
S. No	Specification	% Compliance (describe deviation)	Reference of the specification (page no., line no. in the product catalogue)
Equipment A: High speed floor model refrigerated centrifuge (One Qty. with accessories),			
A1.	The centrifuge should have capacity for centrifugation of up to 6-liter volume using a fixed angle rotor and up to 4-liter volume using a swinging bucket rotor.		
A2.	The same centrifuge should be able to allow centrifugation at speeds to up to 100,000 x g with a speed control accuracy of ± 25 rpm.		
A3.	The centrifuge should allow automatic locking and instant identification of rotors and a simple quick push-button rotor exchange mechanism to automatically lock the rotor onto the drive adapter, eliminating the need for a tool or to hand tighten.		
A4.	The centrifuge should have a brushless, high frequency direct drive.		
A5.	The centrifuge should be compatible with light-weight, corrosion-resistant carbon fiber rotors allowing centrifugation of 6 x 1 L bottles, 40 x 50 mL conical tubes (swinging bucket), and up to 24 microplates (swinging bucket) per run.		
A6.	The centrifuge should be able to tolerate an imbalance of up to 5 % of the opposing loads.		
A7.	The centrifuge should be equipped with micro-processor-based touch screen display for easy operation even with gloves along with provision to create password protected multi-user login IDs and save up to 120 programs.		
A8.	The centrifuge must have a partial vacuum system, with an optional HEPA filter. There should be an option to run the machine without the use of partial vacuum for centrifugation of sensitive samples.		
A9.	The centrifuge should have provision to allow acceleration and deceleration at different speeds and should have a run time for up to 99 hours.		


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A10.	The equipment should allow logging of the runs and should allow fetching of the logs via a USB drive or Ethernet-based connections.		
A11.	The system should be compatible with real time monitoring of the runs using smart phones.		
A12.	The equipment should allow centrifugation between a temperature range of -20°C to 40°C with a temperature accuracy of ± 2°C.		
A13.	The refrigeration system should be based on CFC/ HCFC free chemistry.		
A14.	The system should operate with a power supply of 200-240 V, 50 Hz, 30 A, single phase.		
A15.	The centrifuge must have an energy savings mode ("sleep mode") to reduce power consumption up to 15 % by turning itself off if idle for a certain period of time.		
A16.	The centrifuge must satisfy cULus and CE safety requirements without being bolted to the floor, to provide flexibility to relocate within the facility.		
A17.	The same centrifuge should be accompanied with 1 Qty. of a light-weight, carbon fiber-based, non-corrosive fixed-angle rotor allowing centrifugation of 6 x 1000 ml volume at speed of up to 9,000 rpm (at least 17,500 x g) and 36 Qty of compatible PP-CO bottles.		
A18.	The same centrifuge should be accompanied with 1 Qty. of a light-weight, carbon fiber-based, non-corrosive fixed-angle rotor allowing centrifugation of 6 x 500 ml volume at speed of up to 12,000 rpm (at least 24,000 x g) and 72 Qty of compatible PP-CO bottles.		
A19.	The same centrifuge should be accompanied with 1 Qty. of a light-weight, carbon fiber-based, non-corrosive fixed-angle rotor allowing centrifugation of 6 x 250 ml volume at speed of up to 14,000 rpm (at least 30,000 x g) and 72 Qty of compatible PP-CO bottles.		
A20.	The centrifuge should be accompanied with 1 Qty. of a light-weight, carbon fiber-based, non-corrosive fixed-angle rotor allowing centrifugation of 12 x 50 ml volume at speed of up to 20,000 rpm (at least 51,400 x g) and 150 Qty of compatible PP-CO bottles.		
A21.	The centrifuge should be accompanied with 1 Qty. of a light-weight, titanium-based, fixed-angle rotor allowing centrifugation of 8 x 50 ml volume at speed of up to 29,000 rpm (at least 100,000 x g) and 150 Qty of compatible PP-CO bottles.		

A22.	The centrifuge should carry 5-years comprehensive warranty on all parts and labour. The carbon fibre rotors should carry 15 years warranty and the titanium rotor should carry 5 years warranty.		
A23.	Models No of the Centrifuge and catalogue nos of Rotors and tubes should be mentioned.		
A24.	Copy of the detailed price bid (showing details of the quoted items) without prices should be uploaded as part of the technical bid.		
A25.	Provide name and contact details of three locally (NCR) resident Electronic, Refrigeration and mechanical engineers employed with the tenderer.		
A26.	Provide list of at least three installations with user name and contact details of the same or similar machine as quoted.		
Equipment B: Ultra-low temperature freezer (Three Quantities)			
B1.	The freezer be upright with approximately 370 litre capacity and two 1 horsepower compressors with cascade system to maintain -86°C under Indian Laboratory condition maintained at 28-30°C.		
B2.	Exterior dimensions should not exceed 33.3 (W) x 77.9 (H) x 32.9 inches (D) (84.6cm x 197.9cm x 83.6cm) and interior dimensions should not exceed 23.0 (W) x 51.5 (H) x 19.3 (D) (58.4cm x 130.8cm x 49.0cm).		
B3.	The freezer must have stainless steel interiors with 5 inner compartments with adjustable solid stainless steel shelves and five separate inner doors.		
B4.	The freezer must have capacity to accept 4 adjustable side access racks per shelf and dimension of each rack should not exceed 11.6 x 5.4 x 16.5 inch and should be able to accommodate 12 boxes of 2" height in 4x3 (HxD) configuration.		
B5.	The freezer should have latch and handle for ergonomic handling and one hand operation with padlock capability.		
B6.	The refrigeration system of the freezer should be based on Non-CFC refrigerants.		
B7.	The freezer should have exterior body made of heavy gauge durable steel with powder coated paint finish.		

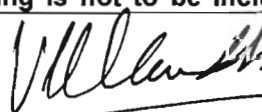
B8.	The freezer must have at least 5 inches non-CFC foamed-in-place polyurethane insulation and at least 4.5 inches in the door.		
B9.	The freezer should have Triple-sealing silicone door gasket.		
B10.	The freezer should have a Down-feed evaporator.		
B11.	The freezer should have two 10 inches tube axial fans to provide maximum cooling of the compressor housing.		
B12.	The freezer should be equipped with heavy-duty dual wheel swivel locking casters.		
B13.	The freezer should have automatic voltage compensator to respond to high and low voltages.		
B14.	The freezer should allow front to back airflow with easily removable and washable air filter.		
B15.	The freezer should have service valves for easy recovery of refrigerants and field servicing.		
B16.	The freezer should have hinged grill swing out door in front for easy access to air filter and battery		
B17.	The freezer should have a vacuum relief port for easy re-opening after initial door openings.		
B18.	The freezer should have 4" open x 12" long heavy duty hinge for ensuring positive closure and uninterrupted service.		
B19.	The freezer should be equipped with a microprocessor controller to monitor temperature in one degree C increments, with push button type eye-level digital display.		
B20.	The temperature probe must be positioned to insure the alarm sounds before the stored product can be affected by a rise in temperature.		



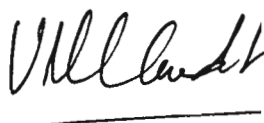
B21.	The freezer must be equipped with battery back up for the alarm monitoring system and should have both visual and audible alarms to alert operator of over and under temperature, power fail, door ajar, and low battery conditions.		
B22.	The freezer should include dry contacts for connection to optional remote alarms.		
B23.	The freezer must be US-FDA Certified and a copy of the Certificate must be attached.		
B24.	The Freezers should carry 5-years comprehensive warranty on all parts and labour.		
B25.	Models No. of the Freezer should be mentioned.		
B26.	Copy of the detailed price bid (showing details of the quoted items) without prices should be uploaded as part of the technical bid.		
B27.	Provide name and contact details of three locally (NCR) resident Electronic, Refrigeration and mechanical engineers employed with the tenderer.		
B28.	Provide list of at least three installations of the same or similar machine as quoted and provide performance certificates from the users who purchased same or similar freezers in the last 24 months. The certificate should mention that the freezers are maintained at -80°C during the period of installation without any breakdown.		
Equipment C: A2 type biological safety cabinet (One Qty. with accessories)			
C1.	The biological safety cabinet shall be of Class II A2 classification, 6 Feet work space suitable for use in Cell culture/microbiology applications in safety levels 1 to 3, and should be certified from international standards NSF/ANSI 49 and DIN 12980 with no deviation from the certification.		
C2.	The cabinet should be operated through remote control for opening the front window, switching on/off of the air flow, UV lights etc.		
C3.	The cabinet should have easily cleanable and autoclavable scratch-resistant, removable stainless steel working surface with two 30 cm segment, and one 120 cm segment.		


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C4.	The dimensions of the cabinet should be 6 foot - Exterior: ~75.0 x 63.0 x 32.0 inches and Interior: ~71.0 x 31.0 x 25.0 inches.		
C5.	The safety cabinet must have an aerosol tight, electrically driven front window made of laminated safety glass that seals the inner chamber for secure protection from contaminants.		
C6.	The cabinet should have negative pressure sidewall plenums to prevent leaks to outer environment.		
C7.	The cabinet should have stainless steel interiors with all metal plenums.		
C8.	The cabinet should have stand by mode to reduce airflow to during low-usage periods.		
C9.	The cabinet should incorporate HEPA filters for supply and exhaust air, providing efficiency of 99.995%.		
C10.	The cabinet should have a programmable powerful timed crossbeam UV-irradiation on both sidewalls to illuminate the entire working area without causing shadows.		
C11.	The cabinet should have removable and autoclavable arm rests specially designed to prevent front air ducts from becoming obstructed during operation by a user's arms, and adjustable to enhance ergonomics for the specific user maximizing comfort and safety.		
C12.	The cabinet should be supplied with fixed height floor stand with 750 mm working height.		
C13.	The cabinet must feature both visual and audible alarm functions to indicate discrepancies in operating conditions relative to the parameters of inflow and down flow air movement and window placement, to maximize user safety.		
C14.	The cabinet should also have the digital control with display placed on back wall of the work chamber.		
C15.	The cabinet must run using the brushless DC motor technology that should not consume more than 300 watt.		
C16.	The cabinet will have to be connected to exterior through a hard duct with controlled exhaust fan if required due to backpressure as the length of the duct is expected to be about 6 ft. The cost of ducting is not to be included but any connecting		


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	box or other accessory if required should be included.		
C17.	The biosafety cabinet should carry 5-years comprehensive warranty on all parts and labour except filters.		
C18.	Models No. of the Biosafety bench and Part No. of essential accessories including those in C.3 and C.16 should be mentioned.		
C19.	Copy of the detailed price bid (showing details of the quoted items) without prices should be uploaded as part of the technical bid.		
C20.	Provide name and contact details of two locally (NCR) resident Electronic and mechanical engineers employed with the tenderer.		
C21.	Provide list of at least three installations with user name and contact details of the same or similar machine as quoted.		
Equipment D: Water-jacketed CO2 incubator (One Qty. with accessories)			
D1.	The incubator should be water-jacketed with a capacity of approx. 185 Litres and should be based on an easily stackable design without need for any accessory for stacking.		
D2.	The exterior dimension should not exceed 26.0 (W) x 39.5 (H) x 25.0 (D) inches (i.e. 66.0cm x 100.3cm x 63.5cm) and the interior dimensions should not exceed 21.3 (W) x 26.8 (H) x 20.0 (D) inches (i.e. 54.1cm x 68.1cm x 50.8cm).		
D3.	The water jacket should surround the sides, back, top, and bottom of incubator chamber to ensure temperature stability, especially during power cuts.		
D4.	The inner gasket of the incubator should be removable and easily cleanable.		
D5.	The incubator should have Non-CFC foam insulation on the outer door.		
D6.	The incubator should have built-in heated inner glass door to provide quicker recovery to uniform temperature after door openings and minimized condensation on the glass.		


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D7.	The incubator should have field reversible inner and outer doors so that incubator can be easily configured for use anywhere in the lab.		
D8.	The incubator should come with polished stainless steel interiors with fully coved corners for easy cleaning.		
D9.	The incubator should have 4 easily removable stainless steel shelves and a removable humidity pan for keeping water.		
D10.	The incubator should have a working temperature range of + 5°C to 55°C with an accuracy of +1°C		
D11.	The incubator should be able to maintain a Temperature Uniformity of $\pm 0.2^{\circ}\text{C}$ at 37°C.		
D12.	The incubator should be operational between the CO ₂ ranges of 0-20 % with CO ₂ control better than $\pm 0.1\%$.		
D13.	The CO ₂ sensing technology should be based on thermal conductivity sensors and should allow setting and reading of CO ₂ levels at increments of 0.1 %.		
D14.	The incubator should have programmable alarm system for deviations in temperature, CO ₂ levels, and humidity levels, etc.		
D15.	The incubator should be able to sustain relative humidity levels of up to 95%.		
D16.	The incubator should have fan-assisted HEPA filtered airflow system in the chamber producing Class 100 chamber air quality within 5 min of door closing. The HEPA filter should be replaceable and located inside the incubator chamber for optimum filtering, easy access, and simple replacement (without any tools).		
D17.	The incubator should have built-in preventive maintenance system with adjustable timer to notify user when to replace the filter.		
D18.	All probes and sensors should be located inside the chamber of the incubator for precise control and reporting of different parameters.		
D19.	The incubator should have Microprocessor control/monitoring system with touch screen-based displays for temperature, CO₂, and alphanumeric message center , which is easy to read, easy to program and allows tracking and		


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	changing of different parameters. This should also automatically maintain the logs of all the interactions with incubator.		
D20.	The incubator should have microbiological filters on all the gas inlets and outlets and sample ports to reduce the potential contamination sources.		
D21.	The incubator should have automatic electronic start up and automatic CO2 auto-zero facility for easy start up and use.		
D22.	The incubator should be UL listed and CE marked.		
D23.	The CO2 incubator should carry 5-years comprehensive warranty on all parts and labour.		
D24.	The incubator should come with 12 HEPA filters and 30 inline filters.		
D25.	Models No. of the incubator should be mentioned.		
D26.	Copy of the detailed price bid (showing details of the quoted items) without prices should be uploaded as part of the technical bid.		
D27.	Provide name and contact details of two locally (NCR) resident Electronic and mechanical engineers employed with the tenderer.		
D28.	Provide list and contact details of at least three installations of the same or similar machine as quoted and provide performance certificates from the users who purchased same or similar CO2 incubators in the last 24 months.		



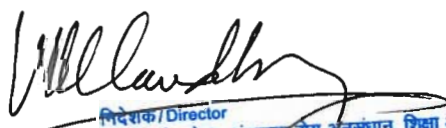
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Annexure II

Format for Price Bid for the supply of High speed floor model refrigerated centrifuge (Equipment A; One Qty. with accessories), ultra-low temperature freezer (Equipment B; Three Quantities), A2 type biological safety cabinet (Equipment C; One Qty. with accessories), and water-jacketed CO2 incubator (Equipment D; One Qty. with accessories)

Equipment A: High speed floor model refrigerated centrifuge- One Qty. with rotors and bottles/tubes as per details in the technical part		
S. No.	Item	Price (Currency)
1(A)	<p>Cost of Equipment A, High speed floor model refrigerated centrifuge- One Qty. with rotors and bottles/tubes including 5 year's comprehensive warranty as per specification in the technical part. Tenderer should provide part no and quantities for each item and may quote individual or consolidated final FOR/CIF (Sea freight) cost.*</p> <p>Details of Rotors and bottle and additional tubes/bottles:</p> <ul style="list-style-type: none"> • 1 Qty. of a light-weight, carbon fiber-based, non-corrosive fixed-angle rotor allowing centrifugation of 6 x 1000 ml volume at speed of up to 9,000 rpm (at least 17,500 x g) and 36 Qty of compatible PP-CO bottles. • 1 Qty. of a light-weight, carbon fiber-based, non-corrosive fixed-angle rotor allowing centrifugation of 6 x 500 ml volume at speed of up to 12,000 rpm (at least 24,000 x g) and 72 Qty of compatible PP-CO bottles • 1 Qty. of a light-weight, carbon fiber-based, non-corrosive fixed-angle rotor allowing centrifugation of 6 x 250 ml volume at speed of up to 14,000 rpm (at least 30,000 x g) and 72 Qty of compatible PP-CO bottles • 1 Qty. of a light-weight, carbon fiber-based, non-corrosive fixed-angle rotor allowing centrifugation of 12 x 50 ml volume at speed of up to 20,000 rpm (at least 51,400 x g) and 150 Qty of compatible PP-CO bottles. • 1 Qty. of a light-weight, titanium-based, fixed-angle rotor allowing centrifugation of 8 x 50 ml volume at speed of up to 29,000 rpm (at least 100,000 x g) and 150 Qty of compatible PP-CO bottles. <p>The number of bottles required are in addition to those which come with rotors, hence, the consolidated cost of bottles shown above may quoted separately as these are consumable items.</p>	
	Packaging and forwarding, Sea Freight and Insurance	
Grand Total for Equipment A; CFS@, Patparganj, New Delhi and FOR UDSC#		
2 (A)	CMC beyond 5 years of initial Warranty	Year 1
		Year 2
		Year 3
		Year 4
		Year 5
	Total cost for CMC beyond 5 years&	


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Equipment B: Ultra-low temperature freezer (Three Quantities with accessories), as per details in the technical part		
S. No.	Item	Price (Currency)
1(B)	Cost of Equipment B, Ultra-low temperature freezer (Three Quantities with accessories), including 5 year's comprehensive warranty as per specification in the technical part. Tenderer should provide part no and quantities for each item and may quote individual or consolidated final FOR/CIF (Sea freight) cost. *	
	Packaging and forwarding, Sea Freight and Insurance#	
Grand Total for B; CFS@, Patparganj, New Delhi and FOR UDSC#		
2 (B)	CMC beyond 5 years of initial Warranty	Year 1
		Year 2
		Year 3
		Year 4
		Year 5
Total cost for CMC beyond 5 years&		

Equipment C: A2 type biological safety cabinet (One Qty. with accessories), as per details in the technical part		
S. No.	Item	Price (Currency)
1(C)	Cost of Equipment C, A2 type biological safety cabinet (One Qty. with accessories), including 5 year's comprehensive warranty as per specification in the technical part. Tenderer should provide part no and quantities for each item and may quote individual or consolidated final FOR/CIF (Sea freight) cost. *	
	Packaging and forwarding, Sea Freight and Insurance#	
Grand Total for C; CFS@ Patparganj, New Delhi and FOR UDSC#		
2 (C)	CMC beyond 5 years of initial Warranty	Year 1
		Year 2
		Year 3
		Year 4
		Year 5
Total cost for CMC beyond 5 years&		

Equipment D: Water-jacketed CO2 incubator (One Qty. with accessories), as per details in the technical part		
	Item	Price (Currency)
	Cost of Equipment D, Water-jacketed CO2 incubator (One Qty. with accessories), including 5 year's comprehensive warranty as per specification in the technical part. Tenderer should provide part no and quantities for each item and may quote individual or consolidated final FOR/CIF (Sea freight) cost. * Accessories include: 12 HEPA filters and 30 inline filters.	
	Packaging and forwarding, Sea Freight and Insurance#	
Grand Total for D; CFS@, Patparganj, New Delhi and FOR UDSC#		
2 (D)	CMC beyond 5 years of initial Warranty	Year 1


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		Year 2	
		Year 3	
		Year 4	
		Year 5	
	Total cost for CMC beyond 5 years ^{&}		

TENDERER MAY QUOTE SPECIAL PRICING FOR SUPPLY OF BUNDLE OF ALL/SOME of THE EQUIPMENT WITH SPECIFICATIONS AS DESCRIBED FOR THE INDIVIDUAL EQUIPMENT.	
Item	Price (Currency)
Cost of Equipment A, High speed floor model refrigerated centrifuge (One Qty. with accessories)	
Packaging and forwarding, Sea Freight and Insurance [#]	
Grand Total for A; CFS [@] , Patparganj, New Delhi and FOR UDSC [#]	
Cost of Equipment B, Ultra-low temperature freezer (Three Quantities with accessories)	
Packaging and forwarding, Sea Freight and Insurance [#]	
Grand Total for B; CFS [@] , Patparganj, New Delhi and FOR UDSC [#]	
Cost of Equipment C, A2 type biological safety cabinet (One Qty. with accessories),	
Packaging and forwarding, Sea Freight and Insurance [#]	
Grand Total for C; CFS [@] , Patparganj, New Delhi and FOR UDSC [#]	
Cost of Equipment D, Water-jacketed CO2 incubator (Equipment D; One Qty. with accessories)	
Packaging and forwarding, Sea Freight and Insurance [#]	
Grand Total for D; CFS [@] , Patparganj, New Delhi and FOR UDSC [#]	
Cost of bundled Equipment (Tenderer must list the equipment and accessories as required in technical specification with part no and quote total cost)	
Packaging and forwarding, Sea Freight and Insurance for the bundle [#]	
Grand Total for bundle; CFS [@] , Patparganj, New Delhi and FOR UDSC [#]	

***All cost should be without added Taxes.** It may be noted that the University of Delhi is eligible for both concessional GST and concessional Custom duty. But, the applicable taxes/duties should be mentioned at the current prevailing rates keeping in view the current exemptions for the University of Delhi.

@ Only for direct import.

#The Tenderer supplying equipment through direct import will be responsible for supervising lifting of equipment to the laboratory located on the first Floor/ Ground Floor and for the installation. However, University will get the custom Clearance and transportation of equipment to UDSC and also arrange for lifting equipment. Supply against Indian Rupee will be FOR UDSC.

& This is only for cost comparisons. The initial order may not include this. At the time of offering the CMC beyond initial 5 years, the supplier may quote a new price of this additional CMC in foreign currency/Indian Rupee, which could be lower than quoted in the original tender.



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