

**The HIV-1 Drug Resistance Equipment for each site:**

1. Biosafety cabinet Class II, type A2-1
2. PCR Workstation-2
3. Nucleic acid extraction system-1 with power backup
4. Thermal Cycler-2
5. Mini Spin -3
6. Bio-Fragment analysis system -1
7. Fluorometer-1
8. Next Generation Sequencing Platform with 10 years warranty-1
9. Workstation Computer: 16 core Processor 64 GB RAM, 10 TB SSD Storage, dedicated graphic card, i9 and above, with UPS-1
10. Reporting Desktop Computer system with printer and scanner with UPS backup- 1
11. Deep freezer (-80°C)-1
12. Deep freezer (-20°C)-2
13. Refrigerator (2-8°C)-2
14. Vortex-3
15. Microcentrifuge (For 1.5ml/2.0ml tubes) (All in One, with rotors include swing up)-1
16. Micropipette set (100-1000ul, 20-200ul, 10-100ul, 2-20ul, 0.5-10ul, 0.1-2.5)-3 set
17. Benchtop Clinical Centrifuge-1
18. Digital Thermo-hygrometer-4
19. Scientific Timer-6
20. Multichannel Pipettes (0.5-10 µl, 2-20 µl, 30-300 µl)-2set
21. A suitable 5 KVA branded online UPS with 4 hrs backup-: 1
22. 96 Bottom Magnet -1
23. 16 wells Magnet -1
24. Dehumidifier-1
25. Thermomixer-1
26. 4 Bay NAS 40 TB Storage Hard Drive (External)-2
27. Vibration Free Table -1
28. Chairs - 4
29. AC Machines 2ton with Stabilizer - 2
30. Cup Boards - 2
31. Lab Stools (Adj Heights) with back support- 6
32. Plate centrifuge (96 well plate)- 1

## **1. Biological safety cabinets (BSCs): Bio safety cabinets Class II, Type A2**

- **Certification:**

1. It must be NSF (National Sanitation Foundation)/ANSI 49 certified/EN12469/BIS standard

- **Design and dimensions cabinet:**

1. The exterior dimensions must be at least WxHxD (in mm) 1300 x 1500 x 750.
2. The Interior dimensions must be at least WxHxD (in mm) 1200 x 630 x 600.
3. The working height of front window must be at 8 to 10 inches and be made of laminated safety glass to ensure containment of potentially hazardous samples in the case of accidental glass breakage.
4. The maximum height of front window opening must be between 500 to 600mm.
5. The front of the cabinet must be angled 10° to help minimize glare on the window to the user.
6. Must be provided with comfortable armrest or V shaped air vent grill which should sit just above the intake grill to enable farther reach inside the cabinet without hampering safe airflows inside the cabinet working area.
7. Must be one piece 304 stainless steel interior or better or equivalent.
8. Must have flat, single-piece stainless steel removable work tray preferably with seamless lift out knobs.
9. Must be having epoxy-coated steel exterior
10. Must be with door- fully closing, clear 1/4 tempered safety glass sash.
11. Must be supplied with Counter balanced adjustable (Preferably Electrical or manual if electrical not available) base stand of standard height for laboratory work.
12. Must be supplied with Combustible gas valve.
13. Must be supplied with Non-combustible gas valve.

- **Electrical compatibility:**

1. Must be compatible at 220 V, 50/60 Hz.
2. Power plug should fit on Indian system of electrical supply.

- **Filters specifications:**

1. H14 HEPA EN 1822, 99.995% MPPS (Most Penetrating Particle Size) or better.
2. Must have Supply and exhaust HEPA filters.
3. Gauge for monitoring the condition of all HEPA filters as well as work space

- **Air Circulation:**

1. Airflow is drawn into the front grille of the cabinet, providing personnel protection.
2. Inflow face velocity (open front) of at least 105 fpm.

3. Down flow velocity of minimum 55 fpm (0.3 m/sec)
  4. Air flow pattern: 70% recirculation of air to the cabinet work area through HEPA filter, 30% balance can be exhausted through HEPA filter into the canopy unit. Must have supply and exhaust air through HEPA filters.
  5. All the positive pressure contaminated plenums within the cabinet are surrounded by a negative air pressure plenum thus ensuring that any leakage from a contaminated plenum will be drawn into the cabinet and not released to the environment. Also the plenum to be under negative pressure to the room.
  6. Motor for air circulation should be Dual DC & must automatically adjust the airflow speed (balancing inflow and down flow) without the use of a damper to ensure continuous safe working conditions.
  7. Cabinet must be capable of automatically handling more 150% or more increase in pressure drop across the filter without reducing total air delivery >10%.
  8. The cabinet must automatically reduce fan/blower motor speed to 30% when the front window sash is in closed position to ensure reduced energy consumption when the cabinet is not in use.
  9. Canopy (Thimble) unit as per the NSF 49/ ANSI 49 certified/EN12469/CE/BIS guidelines for the Bio safety cabinets Class II, Type A2 must be provided. All the material, labour technical manpower etc. required is to be provided by the installation agency. The site may be inspected if needed after taking permission from head of department microbiology of the institute.
  10. LED/LCD display:
    - a) The microprocessor must display the inflow and down flow air velocities in real-time on an LED/LCD display
    - b) Display showing hours of operation.
    - c) Visual and audible alarm for showing front window working position safety.
    - d) Visual and audible alarm for showing airflow safety.
- **Ergonomics:**
    1. Lighting power at least > 1100lx
    2. Smart ports: Two 3 "plugged cable ports one on each side wall
    3. Service valves up to 6 (three on each side wall)
    4. Receptacles of 220V: two standard single receptacles located on rear wall, right and left sides.
    5. Should include a germicidal UV lamp. This UV lamp must be programmable to allow for specific exposure times from 0 to 24 hours.
    6. The cabinet noise level must be less than 65 dBA
    7. Cabinet must be installed at a working surface height of approximately 30 inch from

ground with the adjustable channel stands which has adjustable legs and leg levelers. The legs should provide approximately 6 inch of height adjustment and the leg leveler should provide an additional 2.5 inch of height adjustment.

8. Must be supplied with two adjustable saddle stools.
  9. One footrest must be provided.
- Installation, onsite validation and certification to be provided with testing as per "Field Certified in accordance with NSF/ANSI / BIS 49" and must meet the criteria as prescribed by NSF/ ANSI 49 certified/EN12469/CE/BIS for Bio safety cabinets Class II, Type A2. The certificate of successful installation will only be given after departmental technical committee satisfy with the for performance of onsite validation and certification tests as per standards mentioned in NSF/ANSI 49 document for the following parameters:
    1. HEPA filter leak test
    2. Down flow face velocity
    3. Inflow velocity
    4. Air flow smoke pattern test
    5. cabinet integrity test (positive pressure plenum cabinets only)
    6. site installation assessment tests which includes [alarm functions as required by NSF/ANSI 49 Standard, blower interlock and exhaust system performance (proper exhaust duct negative pressure and canopy and performance)

**Other Conditions:**

1. The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

## **2. PCR work station**

1. Exterior dimensions (H × W × D): approximately 700 mm × 750 mm × 600 mm.
2. Interior working area (W × D): approximately 700 mm × 500 mm.
3. Exterior: stainless steel (SS304) or powder-coated metal.
4. Interior: stable formed stainless steel.(SS304)
5. Side panels transparent, able to absorb wavelengths below 400 nm.
6. Overhead UV light for DNA decontamination; two lamps,15- 25 W each.
7. Separate, switchable, UV air-sterilizing circulation unit; UV lamp (15-25 W).
8. Overhead white light; 15 W; at least 800 lux.
9. At least two plug outlets built into the chamber; AC 230 ± 10 V; 50 Hz; 15A fuse with provision of 5A.
10. Cabinet should have Air Cleanliness of: ISO 14644-1 Class 3 Work zone.
11. Cabinet should have HEPA filter with rating at 0.3 microns.
12. Electricity requirements Power Supply voltage: 230 ± 10 V, 50/60 Hz.
13. Protection class (in accordance with EN 60529).
14. Designed not to interfere with circuit radio (in accordance with EN 55014).
15. Manufacturer's certificate The manufacturer must have a management system certified to ISO 9001 and a type-test certificate of relevant optical and mechanical tests.
16. Installation and maintenance The bidder must arrange for the equipment to be installed by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.
17. The bidder to also provide user training (including how to use and maintain the equipment) and a comprehensive maintenance plan. The cost of the maintenance plan to be defined and guaranteed over the period of warranty.
18. Standard maintenance tools:  
  
All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders to specify the quantity of every item included in their offer (including items not specified above).

19. Spare parts

- Each workstation to be accompanied by an authorized list of accessories and spare parts.
- Set of fuses for the workstation.
- Two UV lamps.

20. The equipment may need to tolerate high humidity (as high as 90% at 35 °C), ambient temperatures of 5–40 °C, fungi, and spikes in the electricity supply.

21. IQ, OQ, PQ Certificate must be provided on system installation. An experiment must be performed to validate system performance before providing above certificates.

22. User/Technical/Maintenance manuals to be supplied.

**Other Conditions:**

1. The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

### **3. Nucleic Acid extractor system**

**Technical data Power:** 100–240 V AC, 50/60 Hz, 650 VA Mains supply voltage fluctuations are not to exceed 10% of nominal supply voltages.

**Fuse:** 2x T6.3A L 250V

**Operating temperature:** 18 to 28°C (64.4 to 82.4°F)

**Relative humidity:** 15–75% (non-condensing)

**Place of operation:** For indoor use only

**Environmental class:** 3K2 (IEC 60721-3-3)

**Storage conditions Temperature:** 15°C to 30°C (59°F to 86°F)

**Relative humidity:** Max. 75% (non-condensing)

**Pipetting system/Syringe size:** 1 ml, pipetting range 5–900 µl

**Sample capacity:** ≥12 samples per run

**Data output USB stick:** USB2.0

**Compatible OS:** Windows 11,10 and Mac

**Operating temperature range:** 0°C to 35°C

**Operating humidity range:** 10 to 90% (with no condensation)

**Storage temperature range:** –20°C to 60°C (–4°F to 140°F)

**UV lamp Wavelength:** 250-280nm; Optical power: 200-300Mw

With suitable power back up

#### **Other Conditions:**

1. The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

#### **4. Thermal Cycler**

**Sample capacity:** 96 x 0.2 ml tubes, 0.2 ml and 0.5 ml tube strips, or 1 x 96-well plate

**Maximum ramp rate, °C/sec:** 4

**Average ramp rate, °C/sec:** 2.5

**Temperature range:** 4–100°C

**Temperature accuracy:**  $\pm 0.25^\circ\text{C}$  of programmed target

**Temperature uniformity:**  $\pm 0.5^\circ\text{C}$  well-to-well within 30 sec of arrival at target temperature

**Input power:** 100–150 VAC, 50–60 Hz; 220–240 VAC, 50–60 Hz; 700 W maximum

**Display:** 5" color touch screen

**Port:** USB A/B/C

**Memory:** 800 typical programs; unlimited with USB flash drive expansion

**Gradient range:** 30–100°C

**Temperature differential range:** 1–25°C

#### **Other Conditions:**

1. The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.



## **5. Mini Spin**

**Timed Run:** To 60 min, 30 sec in one second increments or continuous ( $\infty$ )

**Max Capacity Volume Range:** 48 mL- 0.2, 0.5 and 1.5/2.0 ml microtubes with minimum 8 places

### **Other Conditions:**

1. The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

## **6. Bio-Fragment Analysis System**

**Number of Samples:** 12 to 96 samples concurrently

**Applications:** Next-Gen Sequencing libraries, PCR Fragments, Cell-Free DNA, Genomic DNA and total RNA

**Technology:** Advanced Chip based technology with minimal manual steps and minimum amount of nucleic acid.

**Throughput:** upto 96 samples within 60-90 minutes

**Power:** 150 -240 VA

**Voltage:** 100 to 240 VAC

**Quantity, Quality, Integrity and Size(s) of Nucleic Acid:** 50 to 20,000 bp along with DIN/RIN

### **Other Conditions:**

1. The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

## **7. Fluorometer**

<b>Operating power:</b>	100-240 VAC, 1.0 A/1.2 A
<b>Technology:</b>	Fluorescence based nucleic acid quantification
<b>Frequency:</b>	50/60 Hz
<b>Installation site:</b>	Indoor use only
<b>Operating temperature:</b>	10-40° C
<b>Operating humidity:</b>	20-80% (non-condensing)
<b>Dynamic range:</b>	5 orders of magnitude
<b>Throughput:</b>	upto 8 samples
<b>Processing time:</b>	<5 seconds/sample
<b>Detectors Photodiodes:</b>	measurement capability from 300–1,000 nm
<b>Calibration type:</b>	2- or 3-point standard
<b>Sample data storage:</b>	1,000 samples
<b>Display:</b> resolution color display	5-10 inch capacitive touchscreen with high-
<b>Data ports:</b>	USB cable port (type mini-B/C)
<b>USB drive port:</b>	Type A/B/C
<b>Networking capabilities:</b> or wirelessly using the supplied Wi-Fi adaptor	Transfer data directly to computer using a USB cable
<b>Power supply:</b>	AC adapter with country-specific power cords

### **Other Conditions:**

1. The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

## **8. Next Generation Sequencing Platform**

<b>Technology:</b>	Deep Sequencing
<b>Data Output:</b>	up to 15Gb
<b>Automated Paired End Capability:</b>	Yes
<b>Workflow:</b>	Massively parallel Sequencing
<b>Template amplification:</b>	Amplification (No additional instrument should be required, clonal amplification on board)
<b>Read Length (bp):</b>	up to 2x150 bp (300 bp)
<b>Raw Accuracy (%):</b>	≥99.9% RAW Accuracy
<b>Q score (Q):</b>	≥30
<b>% Mappable Reads:</b>	>90%
<b>Indel Errors/100 bases:</b>	<0.001
<b>Homopolymer Resolution:</b>	Sequencing single base at a time combined with high Q30 base calls provide robust homopolymer resolution. Should read homopolymer upto 15 bp

### **Other Conditions:**

1. The supplier will provide 10 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs (it could be 10 years warranty or warranty plus CMC)
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation qualification, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. The company will provide all necessary upgrades as and when it is available at no extra cost.
6. Company will be responsible for training of lab staff on operation of equipment.
7. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

**9. Workstation Computer: 16 core Processor 64 GB RAM, 10 TB SSD Storage, dedicated graphic card, i9 and above**

**Operating system:** Windows 11 Pro Processors

**Processor Generation:** Intel® Xeon® W processor

**Processor Frequency Technology:** Intel® Turbo Boost Technology

**Chipset:** Intel® W790 with dedicated graphic card

**Memory:** 64 GB DDR5-4800 MHz RAM

**Memory slots:** 8 DIMM

**Standard memory note:** Transfer rates up to 4800 MT/s. Storage

**Hard drive description:** 10 TB HP Z Turbo Drive PCIe® Gen4 TLC M.2 SSD

**Optical drive:** DVD-Writer

**Hard drive (2nd):** 10 TB 7200 rpm SATA HDD

**Optical drive:** DVD-Writer

**Internal drive bays:** One 3.5"; Four PCIe® M.2 SSD; Three 3.5" HDD Display And Graphics

**Screen size:** 27" Screen upto 4K resolution

**Graphics:** NVIDIA® T1000 (4 GB GDDR6 dedicated)

**Audio features:** Realtek ALC3205-CG

**Pointing device:** HP Wired Desktop 128 Laser Mouse

**Keyboard:** Wired Keyboard

**Ports:** 2 SuperSpeed USB Type-C® 20Gbps signaling rate (USB Power Delivery); 2 SuperSpeed USB Type-A 5Gbps signaling rate; 1 headset/microphone combo

**Ports:** 4 USB Type-A 5Gbps signaling rate; 1 headphone/microphone combo

**I/O Port location:** Front (Entry version)/Rear

**Expansion slots:** 1 PCIe 5 x16; 2 PCIe 4 x16; 2 PCIe 4 x4

With suitable UPS

**Other Conditions:**

1. The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

## **10. Reporting Computer system with printer and scanner**

**Operating system:** Windows 11 Pro Processors

**Processor Generation:** Intel®, i9

**Memory:** 16 GB DDR5-4800 MHz RAM

**Memory slots:** 8 DIMM

**Standard memory note:** Transfer rates up to 4800 MT/s. Storage

**Hard drive description:** 2 TB

**Optical drive:** DVD-Writer

**Optical drive:** DVD-Writer

**Internal drive bays:** One 3.5"; Four PCIe® M.2 SSD; Three 3.5" HDD Display And Graphics

**Screen size:** 17"-21" Screen upto 4K resolution

**Audio features:** Realtek ALC3205-CG

**Pointing device:** HP Wired Desktop 128 Laser Mouse

**Keyboard:** Wired Keyboard

**Ports:** 2 SuperSpeed USB Type-C® 20Gbps signaling rate (USB Power Delivery); 2 SuperSpeed USB Type-A 5Gbps signaling rate; 1 headset/microphone combo

**Ports:** 4 USB Type-A 5Gbps signaling rate; 1 headphone/microphone combo

**I/O Port location:** Front (Entry version)/Rear

**Expansion slots:** 1 PCIe 5 x16; 2 PCIe 4 x16; 2 PCIe 4 x4

**Printer:** Laser Printer

## **Scanner**

### **With suitable UPS**

#### **Other Conditions:**

1. The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.



#### **11. Vertical Deep Freezer -80 °C along with Voltage Stabilizer**

1. One -86°C deep freezer system with temperature control/display,
2. Temperature range: -50 to -86°C, stability  $\pm 1^{\circ}\text{C}$ , uniformity  $\pm 3^{\circ}\text{C}$
3. Capacity cu ft/liters: 650-700 with minimum 3 compartments with doors
4. Cryobox Capacity 2":230 or more,
5. Max. shelf weight: 120lbs/65 kg or more,
6. CFC/HCFC free non-inflammable refrigerant
7. Refrigeration Compressor HP: Two of minimum 1.0 HP each
8. Voltage: 230V, 50/60 Hz.
9. Heavy gauge, cold rolled steel cabinets with a powder coat paint finish for a uniform exterior that resists chipping and rust,
10. 5" (12.7 cm) foamed-in-place polyurethane insulation/ VIP insulation technology
11. Vacuum relief port/ pressure equalization port for easy access after door openings,
12. Easy to remove washable filter for protection from dust on the condenser and increasing refrigeration performance,
13. Single hand operation with an easy-to-use padlock-compatible, ergonomic door handle  
with integrated key lock,
14. Simplified installation with our new easy —roll 2" locking casters,
15. Four inner doors to reduce cold air loss and improve temperature recovery after door openings,
16. Microprocessor control and monitoring system to ensure that all controls and displays  
are easy to reach and read, power management system with low voltage surge protection and buck/boost,
17. Safety-backup systems for additional sample protection in the event of power or mechanical failure.
18. Suitable voltage stabilizer to be supplied to support the instrument
19. The product must be CE (European)/ BIS approved

#### **Other Conditions:**

1. The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

## **12. Vertical Deep Freezer -20 °C along with Voltage Stabilizer**

1. Capacity 350-400 Lts
2. Microprocessor controlled vertical (upright) deep freeze (-20°C) with adjustable 3-4 interior compartments/ adjustable shelves with preferably two internal doors
3. Digital display of temp with facility to set temp between -10 to -40°C with 0.1°C increment.
4. CFC/HCFC free non-inflammable refrigerant
5. Polyurethane vacuum insulation with silicon gasket on doors for tight sealing
6. Double door with lockable outer door
7. Audio-visual alarm for temp. deviation, power failure, door open etc.
8. Low noise level: ≤60 decibel 50Hz/230V
9. Suitable voltage stabilizer
10. The product must be CE (European)/ BIS approved

### **Other Conditions:**

- 1) The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
- 2) The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
- 3) Purchase reserves the right to subject the independent evaluation of performance
- 4) The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
- 5) Company will be responsible for training of lab staff on operation of equipment.
- 6) Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

### **13. Refrigerator**

Type	Single Door
Refrigerator Type	Top Freezer Refrigerator
Defrosting Type	Direct Cool
Refrigerant	CFC/HCFC free non-inflammable
Compressor Type	Reciprocatory Compressor
Capacity	230±10 L
Number of Doors	1
Star Rating	5
Cool pad	Yes
Toughened Glass	Yes
Built-in Stabilizer	Yes
Express Freezing	Yes
Moisture Control	Yes
Other Performance Features	12 hrs Cooling Retention During Power Cuts,
Advanced Moisture Control	
Clock	No
Door Lock	Yes
Removable Gasket	Yes

#### **Other Conditions:**

1. The supplier will provide 6 years' warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.
7. The product must be CE (European) BIS approved

#### **14. Vortex mixer with digital display**

1. Adjustable to 100 to 3000 rpm
2. Continuous and intermittent 'touch-control' modes
3. Heavy cast-metal base and suction sup to assure stability prevent 'walking'
4. 220-230 Volts, AC, 50 HZ
5. Digital Display: LED
6. Capacity of 2-3 kg and orbit of 35 mm required.
7. The product must be CE (European)/ BIS approved

#### **Other Conditions:**

1. The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

## 15. Microcentrifuge

<b>Rotor Capacity:</b>	24 or above place closed rotor with metal safety lid
<b>Maximum Speed RPM / RCF (g):</b>	15000 rpm / 15500 g
<b>Display:</b>	Large Backlit LCD display
<b>Imbalance detection:</b>	Imbalance Detection with auto cut – off
<b>Temperature Range:</b>	between -10 to 40°C
<b>Noise Level:</b>	≤ 60 dB
<b>Motor Type:</b>	(BLDC) Brushless DC motor
<b>Timer setting:</b>	1 to 99 minutes or more
<b>Speed / Time setting:</b>	500 to 15000 RPM / Min-Sec timer
<b>Dimensions:</b>	16-24 place x 1.5/2.0 ml microtubes
<b>Rotors and Adaptors: (included in standard pack and include swing up)</b>	Reduction Adaptors for 0.2 ml microtubes Reduction Adaptors for 0.4/0.5 ml and 1.5/2.0 ml microtubes PCR 96 plate/Strip Rotor (2 x 8 x 0.2 ml with metal safety lid)

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### **Other Conditions:**

1. The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

## **16. Pipettes**

### **Single channel (0.1-2.5ul)**

1. Single channel with variable volume
2. Volume Range: 0.1-2.5 ul
3. Dispensing Increment- 0.1 ul
4. Volume adjustment facility
5. Ejector
6. Volume display
7. Compatible for universal tips available in India
8. Calibrated pipette to be supplied along with calibration certificate
9. Fully autoclavable
10. The product must be CE (European) BIS approved

### **Single channel (0.5-10ul)**

1. Single channel with variable volume
2. Volume Range: 0.5-10 ul
3. Dispensing Increment- 0.5 ul
4. Volume adjustment facility
5. Ejector
6. Volume display
7. Compatible for universal tips available in India
8. Calibrated pipette to be supplied along with calibration certificate
9. Fully autoclavable
10. The product must be CE (European) BIS approved

### **Single channel (2-20ul)**

1. Single channel with variable volume
2. Volume Range: 2-20 ul
3. Dispensing Increment- 1 ul
4. Volume adjustment facility
5. Ejector
6. Volume display
7. Compatible for universal tips available in India
8. Calibrated pipette to be supplied along with calibration certificate
9. Fully autoclavable
10. The product must be CE (European) BIS approved

**Single channel (10-100ul)**

1. Single channel with variable volume
2. Volume Range: 10-100 ul
3. Dispensing Increment- 1 ul
4. Volume adjustment facility
5. Ejector
6. Volume display
7. Compatible for universal tips available in India
8. Calibrated pipette to be supplied along with calibration certificate
9. Fully autoclavable
10. The product must be CE (European) BIS approved

**Single channel (20-200ul)**

1. Single channel with variable volume
2. Volume Range: 20-200 ul
3. Dispensing Increment- 1 ul
4. Volume adjustment facility
5. Ejector
6. Volume display
7. Compatible for universal tips available in India
8. Calibrated pipette to be supplied along with calibration certificate
9. Fully autoclavable
10. The product must be CE (European) BIS approved

**Single channel (100-1000ul)**

1. Single channel with variable volume
2. Volume Range: 100-1000 ul
3. Dispensing Increment- 1 ul
4. Volume adjustment facility
5. Ejector
6. Volume display
7. Compatible for universal tips available in India
8. Calibrated pipette to be supplied along with calibration certificate
9. Fully autoclavable
10. The product must be CE (European) BIS approved

**Other Conditions:**

1. The supplier will provide 5 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.



## 17. Benchtop Centrifuge

### Benchtop centrifuge Specifications

1. Table top centrifuge for high volume application with capacity 4x1000ml.
2. Temp. range of operation in between -10 to 40°C or better.
3. Centrifuge should be microprocessor control based, equipped with digital touch screen display and speed shall be displayed/adjustable in both RPM and RCF.
4. Should have short spin key, acceleration 9 and deceleration 9.
5. Should have equipped with automatic sensor for imbalance and maximum operational safety.
6. Rotor requirements:

Swing out bucket rotor	Fixed angle rotor
4 X 96/384 well plate holding rotor. Adapter & Rotor for 2ml, 3ml, 5ml, 15ml and 50ml conical tubes. Adapter for 5ml tubes (FACS/RIA tube)	Rotor Capacity of Min-6x50ml conical tubes or better. Adapter for 50 and 15ml conical tubes and oak ridge tube.

7. Minimum speed for swing out bucket rotor 4200 RPM (for 4x1000 ml capacity) or better.
8. Minimum speed for fixed angle rotor is 22000g or better and 14000RPM or better (for 15ml conical tube holding).
9. Rotors, buckets should be aerosol tight certified and autoclavable.
10. Noise level should be below 6SdBA or better.
11. The quoted model should be IEC 61010 and ISO 13485 certified.
12. The centrifuge should operable as per Indian electricity standard.
13. Run time of the instrument should be 99hr and 59 min with 99 and above program storage options.
14. Instrument should have onsite warranty.
15. The supplier should provide an online UPS for the instruments which can give at least 10-15 Min backup.
16. Prospective bidders likely to participate in the tender should ensure that prompt after sales services & support must be provided to the Institute as and when required.
17. After opening of the technical bid, a physical demonstration of the quoted model should be arranged by the bidder at site, on request. Demonstration will also be a part of technical evaluation process. If the bidder does not comply, such bids are liable to be disqualified.

**Other Conditions:**

1. The supplier will provide 3 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

### **18. Digital Thermo-hygrometer**

Minimum Thermometer (IS:5681-1992) Specification: Minimum Recording Thermometer  
Range: -20°C to +50°C Also provide a certificate of tests form Indian Meteorological Department.

Humidity measuring range 10%RH – 99%RH. Accuracy +/- 5%RH.

#### **Other Conditions:**

1. The supplier will provide 1 year warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

### **19. Scientific Timer**

<b>Channels/Zones:</b>	4
<b>Timing Accuracy:</b>	+/- 01.5 sec/day
<b>Timing Resolution:</b>	1 second
<b>Maximum Setting:</b>	99 hours, 59 minutes, 59 seconds
<b>Clock Mode:</b>	12 and 24 format
<b>Display:</b>	LCD
<b>Material:</b>	ABS Plastic
<b>Battery Type:</b>	1.5V G-13 size button cell battery (included)

#### **Other Conditions:**

1. The supplier will provide 1 year warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

## **20. Multichannel Pipettes**

### **Multichannel (0.5-10ul)**

1. Multichannel-8 channels with variable volume
2. Volume Range: 0.5-10 ul
3. Dispensing Increment- 0.5 ul
4. Volume adjustment facility
5. Ejector
6. Volume display
7. Compatible for universal tips available in India
8. Calibrated pipette to be supplied along with calibration certificate
9. Fully autoclavable
10. The product must be CE (European) BIS approved

### **Multichannel (2-20ul)**

1. Multichannel-8 channels with variable volume
2. Volume Range: 2-20 ul
3. Dispensing Increment- 0.5 ul-1ul
4. Volume adjustment facility
5. Ejector
6. Volume display
7. Compatible for universal tips available in India
8. Calibrated pipette to be supplied along with calibration certificate
9. Fully autoclavable
10. The product must be CE (European) BIS approved

### **Multichannel (20-200ul)**

1. Multichannel-8 channels with variable volume
2. Volume Range: 20-200 ul
3. Dispensing Increment- 1 ul-5ul
4. Volume adjustment facility
5. Ejector
6. Volume display
7. Compatible for universal tips available in India
8. Calibrated pipette to be supplied along with calibration certificate
9. Fully autoclavable
10. The product must be CE (European) BIS approved

**Multichannel (30-300ul)**

1. Multichannel-8 channels with variable volume
2. Volume Range: 30-300 ul
3. Dispensing Increment- 5 ul
4. Volume adjustment facility
5. Ejector
6. Volume display
7. Compatible for universal tips available in India
8. Calibrated pipette to be supplied along with calibration certificate
9. Fully autoclavable
10. The product must be CE (European) BIS approved

**Other Conditions:**

1. The supplier will provide 5 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

## **21. 5 KVA branded online UPS with 4 hrs backup**

**Rating in KVA:** 5.0 KVA

**Switching Technology:** IGBT-PWM

**Input Voltage:** AC Single phase 160V - 260V 50Hz

**Output Voltage:** AC Single phase 230V +/-1% 50 Hz

**Warranty for UPS/Battery:** 5 years

**Battery/Backup:** ≥4 hr

**Type of Battery:** SMF-VRLA conforming to JISC:8702(Pt.I,II&III), Stationary Lead Acid

**Batteries:** with tubular positive plates in monobloc container

**Inbuilt isolation transformer:** With transformer

**Overall Efficiency (%):** ≥80% & <90% with Inbuilt isolation transformer

**Overload limit:** 50% Overload for minimum 3 seconds

**Accessories:** Rack for Batteries

**Type of Design / Construction:** Floor Standing

### **Other Conditions:**

1. The supplier will provide 5 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

## **22. 96 Bottom Magnet**

- Should be Compatible with PCR-strips and 96-well plates (200ul) non-skirted and half-skirted.
- There should be two magnets which allow for significant volume changes
- High wash volumes - 96 Side
- Low Elution Volumes - 96 Bottom
- Allows for concentrating the sample by eluting in tiny volumes ( $\sim 10\ \mu\text{l}$ ).

### **Other Conditions:**

1. The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.



### **23. 16 wells Magnet**

- Optimal working volume: 10–2,000 µL
- Holds up to 16 standard 1.5–2 mL microcentrifuge tubes in numbered spaces
- Good control and visibility of the samples
- Top rack can be quickly removed from the magnet in the base, ready for resuspension, vortexing, rotation, or manual sample shaking
- There should be 2 magnet combines a strong magnetic attraction for efficient separations in standard microcentrifuge tubes with a flexible and smart ergonomic design.

#### **Other Conditions:**

1. The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

## 24. Dehumidifier

Description	Dehumidifier
Dehumidifying Condensate Capacity (At 30°C, 80% RH)	60 liters/Day
Air Flow (M3/hr.)	630 M3/Hr.
Humidity Setting (Adjustable)	Min. - RH 30%
	Max.- RH 95%
Working Temperature	Min. – 5 Deg. C
	Max. – 38 Deg. C
Power Supply (Single Phase)	220-240 VAC/50 Hz
Power Consumption	850 Watt
Compressor Type	Rotary
Noise Level	< 49 dB
Refrigerant	R407C / R410A, CFC Free
Capacity of Water Tank (Bucket Capacity of Drain)	8 Liters.
Filter	G2 Grade, Washable / Cleanable by water & air
Automatic Defrost	Provided
LCD Display	Room Temp. Present Humidity Required Humidity Full water tank warning signal Fan speed Timer- 1-24 hrs.
Condenser (Tubes & Fins)	Tube-Copper & Fins – Aluminium
Net Weight (approx.)	32 Kgs.
Gross Weight (approx.)	35 Kgs.
Product Dimensions (W x D x H) (Approx.)	335 x 490 x 660 mm (13.1" x 19.2" x 25.9")
Box Dimension (W x D x H) (Approx.)	420 x 560 x 745 mm (16.5" x 22" x 29.3")
Castor (Wheels) for easy movable	Provided
Quality/Safety Approval	ISO/GS/CE/ROHS/EMC

**Special Functions and Features–**

- \*Automatic humidity control,
- \*Adjustable RH 30-95%
- \*Display humidity trouble.
- \*Auto shut off when the tank is full.
- \*Continuous drain option
- \*Washable, Pre Filter
- \*Humidity set at will, humidity control
- \*Micro-computer control system
- \*It can be set to be off from 1 hour to 24 hours.
- \*3 minutes delayed for protecting the compressor.
- \*The transducer can examine itself.
- \*Microcomputer automatic defrost system, suitable for low-temperature ambience.

**Other Conditions:**

1. The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

## **25. Thermomixer**

1. Shaker Incubator for tubes and plates.
2. System should be capable of providing Peltier-driven heating, cooling, and mixing.
3. Temperature range: 15° C below ambient to 100° C with a minimum setting of 1° C.
4. Mixing frequency is 300-3000rpm.
5. Incubation accuracy is  $\pm 0.5^{\circ}$  C above ambient temperature.
6. Instrument should be specifically designed to take care of cross-contamination by making sure spillage or lid wetting does not happen even at very low volumes.
7. Instrument should have the flexibility to accommodate various tube formats from 0.5 ml to 50 ml tubes and should be supplied with a block for a 1.5 ml microcentrifuge tube and 50 ml centrifuge tube.
8. It will also be possible to use various formats of plates like microtiter plates, deep well plates, ELISA Plates, PCR 96 plates, and PCR 384 plates.
9. A heated top should have optionally available to prevent condensation on the lid or walls of the tube).
10. Instrument should be capable of recognizing the blocks automatically and their respective speed and temperature.
11. Programming facility with interval mixing is possible, and will be able to store 20 programs with four steps each.
12. Soft keys for easy access to program parameters will be present.
13. Instruments have CE certification.
14. Warranty: 6 Years

### **Other Conditions:**

1. The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

#### **26. 4 Bay NAS 40 TB Storage Hard Drive (External)**

**8-bay NAS:** Minimum 8 bays scalable upto 18 bays, compatible with SATA/ NL- SAS, SSD drives

**Storage capacity:** Usable volume of 14TB, scalable to maximum 300TB usable volume

**NAS RAM:** 40GB NAS Ram

**Compatible Drive types:** 2.5" or 3.5" SAS/SATA/SPSS/Python HDD/SSD drives

#### **Other Conditions:**

1. The supplier will provide 5 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC)
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

## **27. Vibration Free Table**

Size: 3feet x 3feet

Top: Minimum 4 inches thick.

Bottom: 1 inch thick SS.

304 grade 20 Gauge S.S sheet on top and bottom

Black Stone S.S section 50\*50mm and legs 50\*50mm

Foam sheet 35mm providing and fixing

Flatness of the top: +/- 0.1mm or better over area

Mounting holes: Appropriate size tapped holes on top on 25mm Grid

Bonding: Good quality Semi-solid epoxy.

### **Other Conditions:**

1. The supplier will provide 1 year warranty that will include Comprehensive Annual Maintenance Contract (CAMC)
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

## **28. Chairs**

### **Revolving chairs-**

- 1 Type of chair: High Back
- 2 Tilt mechanism: Active bio synchro mechanism
- 3 Locking mechanism: Tilt limiter
- 4 Seat depth adjustment: Fixed type
- 5 Revolving mechanism: Designed with 360 degree-revolving type
- 6 Pedestal base: Glass filled nylon
- 7 Seat material: PU foam
- 8 Density of PU used in seat (kg per cubic meter):  $>40 \leq 50$
- 9 Thickness of PU used in seat (mm):  $>40 \leq 50$
- 10 Minimum seat height from floor surface (mm):  $>400 \leq 500$
- 11 Width of seat (mm):  $>500$
- 12 Depth of seat (mm):  $>450 \leq 500$
- 13 Seat upholstery material: Polyester fabric
- 14 Backrest type: Flexi back
- 15 Backrest height: Fixed
- 16 Backrest support type: Adjustable lumber support
- 17 Backrest base frame material: Injection molded plastic
- 18 Width of backrest (mm):  $>450 \leq 500$
- 19 Backrest height from the seat level:  $>550$
- 20 Armrest type and arm movement: Adjustable (left, right, up, down, front, back)

### **Other Conditions:**

1. The supplier will provide 3 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC)
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

### **29. AC Machines 2ton with Stabilizer**

**Type of air conditioner:** High wall inverter split air conditioner

**Cooling capacity:** 2 TR Class (24000 BTU/hr +/- 10%)

**Type of compressor:** Rotary

**MOC of condenser and evaporator coils:** Copper

**Refrigerant:** R32

**BEE Star rating:** 3-5 (As per prevailing BEE star rating on date of procurement)

**Indoor unit noise level:** Max 51 dB(A) at highest speed

**Control:** Wireless battery-operated remote having LCD/LED display and provision for control of fan speed (minimum 3 speeds), temperature, swing, sleep mode with ON/OFF timer etc

**Safety:** Overload protection

**Power Supply:** 230V, 50 Hz, single phase.

**Piping:** 6 metres each of the insulated copper refrigerant pipings(suction and return line), 6 meters of electrical cable and 6 meters of PVC drain piping with each AC system

**Accessories:**

- i) Mounting bracket for indoor unit,
- ii) Heavy duty Stand for installing outdoor condenser unit on the roof or on the wall as required with serrated anti-vibration pads.
- iii) Power and control cables of copper

**Warranty:** Minimum 5 years on the whole machine

### **Technical specification of Automatic voltage Stabilizer single phase**

Input voltage 160-260 V

Output voltage 220 V

Capacity 5 kVA

Suitable for Split inverter Air-Conditioner capacity 1.5/2 Ton

Warranty 5 years



**Other Conditions:**

1. The supplier will provide 5 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.

### **30. Cup Boards**

<b>Material:</b>	MS (mild steel)
<b>No. Of Shelves:</b>	4 Shelves
<b>No. Of Doors:</b>	2 Door
<b>Size:</b>	1980 x 915 x 450 mm

#### **Other Conditions:**

1. The supplier will provide 3 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC)
2. The manufacturer should be able to provide service of equipment across India within 24 hrs.
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation and performance qualification

### **31. Lab Stools (Adj Heights) with back support**

<b>Height Adjustment:</b>	With Hydraulic
<b>Frame and Support Made of:</b>	SS 304
<b>Chair Type:</b>	Revolving
<b>Type of Seating:</b>	Only Seat with back support
<b>Pedestal Base:</b>	Stainless Steel
<b>Foot Rest:</b>	With
<b>Pedestal Base Type:</b>	With Wheels
<b>Arms:</b>	With
<b>Max Load Bearing Capacity in Kg:</b>	100 Kg

#### **Other Conditions:**

1. The supplier will provide 3 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC)
2. The manufacturer should be able to provide service of equipment across India within 24 hrs.
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation and performance qualification

### **32. Plate Centrifuge-(96 well plate)**

- To hold 2 PCR plates (96 well plate)
- 4 S Deceleration
- 2550 rpm/600 × g
- 230 V / 50 - 60 Hz

#### **Other Conditions:**

1. The supplier will provide 6 years warranty that will include Comprehensive Annual Maintenance Contract (CAMC) including all spare parts and repairs
2. The manufacturer should be able to provide service of equipment across India within 24 hrs. after accept of breakdown report for the metro location and within 3 days for the non-metro located instruments
3. Purchase reserves the right to subject the independent evaluation of performance
4. The company will provide installation, operational qualification and performance qualification with log book for maintenance of the equipment at no extra cost
5. Company will be responsible for training of lab staff on operation of equipment.
6. Manuals, operation, maintenance & part list with detailed specifications must be provided in original.