Food Safety and Standards Authority of India
(A statutory Authority established under the Food Safety and Standards Act, 2006)
(Quality Assurance Division)
FDA Bhawan, Kotla Road, New Delhi – 110002

Dated, the 26th July, 2019

RFP No. 06/2019-20 EMAPNELMENT FOR SETTING UP MICROBIOLOGY SECTION AND INSTALLATION OF EQUIPMENTS: CORRIGENDUM -03

Further to this office Tender Enquiry No. 06/2019-20 dated 30th April 2019, pre-bid meeting held on 08th May 2019, Corrigendum -01 dated 29th May 2019, Corrigendum – 02 dated 02nd July 2019 and representation received from participants. The following amendment are made in the ibid tender:

PART I – GENERAL INFORMATION AND INSTUTIONS

1. **Last date and time for depositing the Bids:** **19th August 2019 by 1500 Hrs.** The sealed quotations under two bid system (i.e. Technical Bid & Commercial Bid) in sealed covers should be deposited/reached by the due date and time. The responsibility to ensure this lies with the Bidder.

4. **Time and date for opening of Bids:** The tender box will be opened on **19th August 2019 at 1530 hrs**. (If due to any exigency, the due date for opening of the Technical-Bid is declared a closed holiday, then it will be opened on the next working day at the same time or on any other day/time, as intimated by this office).

PART II – ESSENTIAL DETAILS OF ITEMS/SERVICES REQUIRED

1. **Schedule of Requirements** – List of items/services required for setting up a state of art microbiology facility for testing food matrices and water is as follow:

A. Microbiology Laboratory Equipments/Consumables including erection of clean room
B. Associated Civil and Electrical work
C. Provision of Manpower

2. **Technical Details:**

PART-A

Sl. No.	Instruments/Consumables	Qty
1	Laminar Air Flow	01
2	Bio Safety Cabinet Class II Type B2 (Total Exhaust)	01
3	Autoclave Vertical	02
4	Incubators: 1) Ambient to 70 °C and 2) 5 °C to 50°C	02
5	Digital Colony Counter	02

6	Lab Blender	01
7	Water Bath – Serological	01
8	Analytical Balance	02
9	Upright Frost Free Vertical Deep Freezer (-20°C)	02
10	UV-Vis Spectrophotometer	01
11	Binocular Microscope	01
12	Howard Mold Counter	01
13	Refrigerated Centrifuge	01
14	BOD Incubator	02
15	Micro Filtration Assembly	01
16	Digital pH Meter	02
17	Fumigator	01
18	UV Viewing Chamber	01
19	Anaerobic Jar	02
20	Hot Air Oven	02
21	Micropipette	02 Set (06each)
22	Carbon dioxide incubator	01
23	Frost Free Double door (side by side)Refrigerator	02
24	Microbiological Media And Consumables	As per list attached in Technical Bid

Note: Site specific clean room have to be erected as per specifications provided at **Annexure VII**

PART-C

Manpower to be provided:

Successful bidder will have to provide full time three trained personnel specialized in microbiology (Microbiologist -01 and Assistant Analyst -02) for 03 years who will be responsible for the working of the instrument i.e. sample preparation, method validation, operation of instrument and data interpretation. The personnel will not claim to be an employee of FSSAI/State Laboratory. The person will work under the supervision of state laboratory head and carry out the required analysis of various samples received in the lab. He will also be responsible for providing training on the instrument to the laboratory staff.

Bidders will have to maintain backup of the manpower supplied in case of prolonged leave or any unforeseen circumstances.

In case the person provided by the bidder is found to be involved in any unlawful activity, the bidder will be liable to remove him immediately and provide a replacement. The decision of the state food lab would be final and binding to the bidder in this regard.

Note : Engagement of manpower and period of engagement will be at the sole discretion of **FSSAI/State Food Commissioners or any office designated by FSSAI**

3. **Delivery Period –** Delivery period for setting up Microbiology section and installation of equipments would be **180 days** from the date of issue of Supply Order. Please note that Supply Order can be cancelled unilaterally by the Buyer in case items are not received within the Supply Ordered delivery period. Extension of Supply Ordered delivery period will be at the sole discretion of the Buyer, with applicability of Liquidated Damages(LD) clause.

6. **Eligibility Criteria for Pre-Qualification of Bidders**. The firm/Bidder fulfilling the following eligibility criteria will be considered for opening of their Commercial Bids: -

(e) Bidder should have sufficient experience of setting up of laboratory and installation of analytical equipments(satisfactorily work completion Certificate to be attached). **At least one work order of setting up of microbiology laboratory should have been completed in the Government sector**.

TECHNICAL BID FORM (B)

1. Laminar Air Flow

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification **(Yes/No)**	Specify Make and Model
1.	**Main body**	Constructed in Mild Steel with Epoxy Powder Coated		
2.	**Inner Surface**	Inner Back wall & Side wall made in stainless steel, grade SS 304		
3.	**Work Surface**	Seamless, Scratch-free, high quality 18 gauge stainless steel, grade 304		
4.	**Working tray**	Autoclavable & Removable stainless steel work surface for easy cleaning.		
5.	**Filter type**	HEPA filter with integral metal guards & frame gaskets. Supply of HEPA filter 99.997% at 0.3 micron.		
6.	**Primary Filter**	Specially designed pre filter to increase the life of HEPA filter		
7.	**Ergonomic tilt**	Exceptionally comfortable 10 deg ergonomic design improves comfort, prevents user fatigue & promotes safe working techniques.		
8.	**Front control panel**	Provided to avoid exposure of UV Light & Lamp outside, making eyes more comfortable.		

9.	**Front sash door**	Manual sliding sash door made up of Imported poly carbonate sheet or toughened glass with sloping front for better access of samples Front sash door height can be easily adjusted as per required by end-user. The transparent sash door maximizes light & visibility inside the cabinet, providing a bright & open working environment. The closing/opening of front door is integrated with the UV ON/OFF. The UV will automatically switch “OFF” when the sash door is opened & switch “ON” when door is closed to avoid accidental exposure of UV light to the operator.		
10.	**Air velocity**	900 ft/min ± 10.		
11.	**Air volume**	500 cfm & above		
12.	**UV Light programming**	Available with timer		
13.	**Ultra violet tube light**	Germicidal i.e. 254 nm		
14.	**Electrical socket**	Internal socket inside the chamber,5/15 Amp		
15.	**Illumination of work surface**	Fluorescent tube light (intensity > 600 lux) provides excellent illumination for work surface & reduces operator fatigue. Flourescent tube light in set behind front control panel.		
16.	**LCD Screen Display**	Digital Microprocessor controlled for Operating Fluroescent, UV Light & Blower with Audio and Visual alarm for HEPA filters life. And also for Static Pressure Measurement of HEPA Filter. Conveniently located display on outside of the Laminar Air Flow for easy use & also easy to reach from a seated working position.		
17.	**Sleep Mode Operation**	Automatically blower speed reduced up to 30%,this will help to save energy as well as help to maintain sterile work area during Biosafety Cabinet is not in		

		operation		
18.	**Intelligence Alarm System**	Safety purpose Audio & Visual alarm for air fluctuation and for life of the HEPA filter and UV light		
19.	**Working Noise level**	Low/ should be < 65 dB		
20.	**Electronic / Electrical panel**	From clean chamber to give better contamination free results.		
21.	**Electrical safety**	Electrical components used are standard for better electrical safety for the operator.		
22.	**Power supply**	230 V ± 15%, 50 Hz ± 3%		
23.	**Arm Rest bar**	To avoid contamination from outside to inside contamination & for easy working with comfort. Secure & comfortable armrests enhance your comfort during extended work sessions		
24.	**Drainage port**	Provide beneath work surface to facilitate easy & better cleaning of the interior & handling of spillage inside the chamber.		
25.	**Blower-Motor Assembly**	Dynamically & statistically balanced aluminum centrifugal impeller driven by single phase, 1400 RPM motor Double inlet blower fitted in such a way to reduces vibration & noise. Blower is positioned in such a way that, to create an even filter loading, it helps to prolong the life of HEPA filters. Provide uniform airflow by adjusting working voltage of fan.		
26.	**Certificates**	IQ, OQ & PQ Certificates will given Calibration & Traceability certificate provided with NABL accredited. Factory tested DOP test		

		certificate provided.		
27.	**Trolley (Base Stand)**	Provided with lockable castor wheels		
28.	**Certification**	Product must be ISO 9001 : 2015 Certified CE Marked : CE marked product GMP Certified		
29.	**Applicable Standards**	EN ISO 14971:2012/EN ISO 13485 : 2012/EN 980:2008/EN 1041 : 2008/EN 61010-1:2010/ EN61326-1:2013/EN 12469:2000.		
30.	**Size**	4'x2'x2'		
31.	**Warranty**	Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
32.	**Service contract clauses,including prices**	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
33.	**Operating manuals, service manuals, other manuals**	Should provide 2 sets(hardcopy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection		

2. Bio Safety Cabinet Class II Type B2

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the	Specify Make and Model

			specification **(Yes/No)**	
1.	**Size**	4'x2'x2' (MS Inner SS)		
2.	**Main body**	Constructed in Mild Steel with Epoxy Powder Coated		
3.	**Inner Surface**	Inner Back wall & Side wall made in stainless steel SS 304		
4.	**Work Surface**	Seamless ,Scratch-free, high quality 18 gauge stainless steel, grade 304		
5.	**Working tray**	Autoclavable & Removable stainless steel work surface for easy cleaning.		
6.	**LCD Display**	Digital Microprocessor Control System for Operating Fluorescent, UV Light & Blower. Continuously display true value of inflow as well as down flow velocity. Conveniently located display on outside of the Biosafety Cabinet for easy use & also easy to reach from a seated working position		
7.	**Sleep Mode Operation**	Automatically blower speed reduced up to 30%,this will help to save energy as well as help to maintain sterile work area during Biosafety Cabinet is not in operation Special precautions are taken so that if by chance the exhaust blower is not working, you will get buzzer		
8.	**Intelligence Alarm System**	Safety purpose Audio & Visual alarm for air velocity fluctuation and for life of the HEPA filter and UV light		
9.	**Ultra violet tube light**	Germicidal i.e. 254 nm		
10.	**Ultra violet life meter**	Continuously display UV Hour on display		
11.	**UV Light programming**	Available with timer & UV Hour meter to avoid operator risk		
12.	**Interlocking UV**	The closing/opening of front door is integrated with the UV ON/OFF. The UV will automatically switch "OFF" when the sash door is opened & switch "ON" when door is closed to avoid accidental exposure of UV light to the operator.		

13.	**Certification**	An ISO 9001 : 2015 Certified Company CE Marked : CE marked product GMP Certified Product		
14.	**Applicable Standards**	EN ISO 14971:2012/EN ISO 13485 : 2012/EN 980:2008/EN 1041 : 2008/EN 61010-1:2010/EN 61326-1:2013/EN 12469:2000		
15.	**Warranty**	Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
16.	**Service contract clauses, including prices**	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
17.	**Operating manuals, service manuals, other manuals**	Should provide 2 sets(hardcopy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection		

3. Autoclave Vertical

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification **(Yes/No)**	Specify Make and Model
1.	**Application**	**A** vertical steam sterilizer to provide safe, economical and effective sterilization for laboratories that do not want to compromise on quality, safety and reliability and need to sterilize Liquids such as nutrient media and buffer solutions, Solid items such as pipettes, tubes and filters and Glassware and plastic		

		articles		
2.	**Chamber**	Vertical loading type chamber with service basket and **complying to the strictest international directives and standards** equipped with • Steam collection bottles to removes most of the steam during operation • Ware inlet and outlet valve • Drain valve for cleaning or changing with fresh water • Constructed with appropriate stainless steel with superior corrosion resistance to water and steam • High temperature and pressure resistant silicon gasket • Built-in analog pressure gauge • Manual pressure release valve • Wheels/casters for easy transport.		
3.	**Chamber size/Capacity**	Approx. 80-120 lit		
4.	**Gauges**	• Should have a water level gauge • Analog gauges for measuring inner and outer steam pressure. • Should have an inner temperature indicator.		
5.	**Chamber size/Capacity**	Approx. 80-120 L		
6.	**Display**	• Fully Automatic PID Control ± 0.1 °C • LED display for temperature and remaining time		
7.	**Operating Temperature and accuracy**	• Maximum 123°C • Temperature Accuracy : ± 0.5 °C at 121 ° C • Must have Temperature calibration		

8.	**Operating pressure and gauge**	• 15 -20 psi • ANALOG PRESSURE GAUGE (0 - 40 psi pressure guage) indicating actual pressure		
9.	**Timer**	Automatic START/STOP timer		
10.	**Safety warnings and alarms**	• A cycle cannot start if the door is open or not properly locked • The door cannot unlock until chamber pressure reaches room pressure • Over-Temperature Cut-Off with audio visual alarm • Low Temperature Warning: If the temp. stays below 121°C for more than 5 seconds • Low Heat Warning: If the temp. does not reach the sterilization temperature during the set periods • Over-Pressure Cut-Off with audio visual alarm • Over Current Cut-off with audio visual alarm. • Low Water Level heater cut-off and ALARMS		
11.	**Accessories**	• Perforated corrosion free baskets made up of SS 304 (3-4 Nos.) that are stackable two high or even more levels, • Silicone gasket		
12.	**Calibration certificates**	Certificate from ISO17025 accredited lab for temperature, pressure gauges & timer.		
13.	**Operation and maintenance training component**	• The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system and support services till customer satisfaction		
14.	**Certificates Performance and safety standards (specific to the device type);Local and/or**	• Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or		

	international	equivalent BIS Standard) Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety		
15.	**Supplier/ Manufacturer**	• Must be ISO certified for quality		
16.	**Service Support Contact details (Hierarchy Wise; including a toll free/ landline number)**	• Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;		
17.	**Recommendations or warnings**	• Any warning signs would be adequately displayed		
18.	**Warranty**	• Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
19.	**Service contract clauses, including prices**	• List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
20.	**Operating manuals, service manuals, other manuals**	Should provide 2 sets(hardcopy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection		

4. Incubators: 1) Ambient to 70 °C and 2) 5 °C to 50°C

	Specifications	**Requirement**	Please Specify whether the quoted model/items meets the specification	Specify Make and Model

			(Yes/No)	
1	**Application**	For incubation of organisms, such as on agar plates, and also for conditioning of heat sensitive media and to provide an optimal, homogeneous, temperature uniformity and stability to ensure that protocols are fully reproducible –		
2	**Material of construction**	• Double walled construction with complete inner chamber made of Corrosion resistant stainless steel (AISI 430) • Outer chamber should be of steel sheet finished with powder coated point Insulation to maintain desired temperature • Inner glass door • Inner chamber should be fabricated with ribs for adjusting shelves to convenient height and shelves to be supplied • Shelves should be made of polished stainless steel sheet as per chamber		
3	**Capacity**	• 150- 200 liters		
4	**Temperature range**	• Temperature should be thermostatically controlled • Temperature should be thermostatically controlled with range 1) ±2˚ C Ambient to 70˚ C and 2) 5 °C to 50°C • Over-Temperature Cut-Off with audio/ visual alarm • Low Temperature Warning alarm		
5	**Unit**	• Air ventilators to be provided on both side • The equipment should be provide with microprocessor controlled digital display • Temperature homogeneity between top and bottom shelves should be maintained by forced circulation		
6	**Calibration**	Certificate from a ISO 17025 accredited lab for 3 different temperature points		

7	**Operation and training component**	• The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction		
8	**Certificates Performance and safety standards (specific to the device type);Local and/or international**	• Should be FDA/CE/BIS approved product. Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety		
9	**Supplier/ Manufacturer**	• Must be ISO certified for quality		
10	**Service Support Contact details (Hierarchy Wise; including a toll free/landline number)**	• Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;		
11	**Recommendations or warnings**	• Any warning signs would be adequately displayed		
12	**Warranty**	• Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
13	**Service contract clauses, including prices**	• List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
14	**Operating manuals, service manuals, other manuals**	Should provide 2 sets(hardcopy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and		

		routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection		

5. Digital colony counter

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification **(Yes/No)**	Specify Make and Model
1	**Application**	For fast and accurate bacterial or mold colony counting and to aid in determining counts of colony clusters and exceedingly large or small colonies, and can accommodate multiple dish sizes or formats.		
2.	**Material of construction**	Full Stainless steel fabricated body with duly heat cured epoxy coating.		
3	**Display and counting**	It should consist of • Digital display up to 4 digits with confirmation by audible tone. • It should consist of Magnifying lens (greater than 1.5X magnification with digital marking pen) • Accepts petri dish upto size 120 mm diameter with a centering adaptor for standard 90mm petri dish • Glare free viewing low energy bright LED's • Appropriate background viewing translucent and difficult to see colonies. • Zero reset button		
4.	**Operation and training component**	• The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction		

5	**Certificates Performance and safety standards (specific to the device type);Local and/or international**	• Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety		
6	**Supplier/ Manufacturer**	• Must be ISO certified for quality		
7	**Service Support Contact details (Hierarchy Wise; including a toll free/landline number)**	• Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;		
8	**Recommendations or warnings**	• Any warning signs would be adequately displayed		
9	**Warranty**	• Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
10	**Service contract clauses, including prices**	• List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
11	**Operating manuals, service manuals, other manuals**	Should provide 2 sets(hardcopy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection		

6. Lab Blender

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification **(Yes/No)**	Specify Make and Model
1.	**Application**	Stomacher is a product for the quick and safe preparation of samples before it's microbiological and chemical analysis Progressive blending adaptation to the matrix Fixed speed. Accepts all bag sizes 50 to 400 ml 100% stainless steel chamber 75w (power consumption reduced to 30% to 50%)		
2.	**Motion**	Pendular motion/Paddle type		
3.	**LCD Digital Display**	User friendly control, Auto-Manual Mode, Programmable time.		
5.	**Door**	Removable & Autoclavable door opening up to 270˚		
6.	**Bending Capacity**	From 80 – 400 ml in stomacher bags (Sterile with or without filter) Adjustable electronic timer from 10 sec to 3 min Continuous mode available		
7.	**Brushless Motor**	No wearing parts, Less power consumption.		
8.	**Safety**	Electronic circuit breaker which stop the cycle in case of resistant samples motor protection No access to the homogenization chamber during the operation		
9.	**Easy cleaning**	removable paddles and easy access to the stainless steel homogenizing chamber		
10.	**Unit**	No vibration Patended crushing effect Ensured efficiency whatever the sample (from 28 kg to 126 kg) Removable paddles The easiest removable paddles on the market. Built-in waste drawer for		

		spillage collection. 100% stainless steel chamber. Smooth surfaces and rounded corners Extreme Capacity The new « pendular » blending method is revolutionary. Power and efficiency. Progressively & gently stroked samples for an optimal blending. Not “up to” but “from” 28 kgs of pressure by paddle !		
11.	**Warranty**	Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
12.	**Service contract clauses, including prices**	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
13.	**Operating manuals, service manuals, other manuals**	Should provide 2 sets(hardcopy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection		

07. Serological Water Bath

S.no	Specification	Requirement	Please Specify whether the quoted model/items meets the specification **(Yes/No)**	Specify Make and Model
1	**Application**	The water bath is for routine use in microbiology protocols as well for solubilisation with precise temperature control.		

2	**Material of construction**	• Rounded, seamless stainless steel bath to preventing rust, chemical damage and contamination. • Powder coating like epoxy coating exterior for easy cleanup • corrosive resistant stainless steel Gabled drip free lid		
3	**Unit**	• Microprocessor controlled digital display. • Instrument should have lift up drip free bath cover; • Carrier racks should be given for flasks and test tubes racks. • Convenient water bath drains. • Water bath protective media should be there to prevent contamination and formation of algae. • Easy cleaning		
4	**Temperature**	• Temperature Range: Ambient to 90°C • Temperature Accuracy: ± 0.5 °C at 37.0°C • Temperature Uniformity: ± 0.5 °C at 37.0°C • Digital LED display for operating status of TEMP • Over-Temperature Cut-Off • Temperature calibration function		
5	**Alarms**	• Audible warning safety signals should be there for high/low temperature warnings • Low liquid level		
6	**Calibration**	• Certificate from a ISO 17025 accredited lab for 3 different temperature points		
7	**Operation and training component**	• The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction		

8	**Certificates Performance and safety standards (specific to the device type);Local and/or international**	• Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety		
9	**Supplier/ Manufacturer**	• Must be ISO certified for quality		
10	**Service Support Contact details (Hierarchy Wise; including a toll free/landline number)**	• Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;		
11	**Recommendations or warnings**	• Any warning signs would be adequately displayed		
12	**Warranty**	• Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
13	**Service contract clauses, including prices**	• List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
14	**Operating manuals, service manuals, other manuals**	Should provide 2 sets(hardcopy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection		

08. Analytical Balance

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification **(Yes/No)**	Specify Make and Model
1	**Application**	Required to measures mass to a high degree of precision with a **weighing** capacity typically 200 g and a readability of 0.1 mg and protected by a draft shield or an enclosure.		
2	**Operational Requirements**	It should have • Microprocessor based single pan top loading analytical balance with high accuracy and precision. • Reading of the weight by digital display • Balance with transparent case. • Weighing with automatic and manual start and provision for data interface.		
3.	**Technical Specifications**	• Weigh accurately up to 3rd decimal place. • Fully automatic time and temperature controlled internal calibration and balance should be capable to adjust itself Auto zero setting. • Weighing capacity up to 200g Readability 0.1 mg, Repeatability 1 mg or less.		
4.	**Balance should have**	• Fast dismantling chamber for easy clean up		
5.	**Environmental factors**	• Safety for electromagnetic compatibility. • The unit shall be capable of operating in ambient temperature of 20-30 deg C and relative humidity of 80%.		
6.	**Accessories**	• All necessary accessories should be provided with unit.		

7.	**Calibration certificate**	Certificate from a ISO 17025 accredited lab for 3 different weights.		
8.	**Operation and training component**	• The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction		
9.	Certificates Performance and safety standards (specific to the device type);Local and/or international	• Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety		
10.	Supplier/ Manufacturer	• Must be ISO certified for quality		
11.	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	• Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;		
12.	Recommendations or warnings	• Any warning signs would be adequately displayed		
13.	**Warranty**	• Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
14.	Service contract clauses, including prices	• List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		

15.	Operating manuals, service manuals, other manuals	Should provide 2 sets(hardcopy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection		

09. Upright Frost Free Vertical Deep Freezer (-20 °C)

S. no.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification **(Yes/No)**	Specify Make and Model
1	**Application**	For storage of various biological products including, ATCC cultures, enzymes, chemicals or material testing components for a longer period of time		
2	**Unit**	• Interior: Full stainless steel which can be easily cleaned and eliminates any possibility of cross contamination • Cooling Type : Direct cooling • Should be Vertical(Upright)type • Microprocessor-based • Frost Free • Refrigerant : CFC – Free • Easy to read, LED control panel and alarm status with integrated diagnostics • Doors with key lock • Castors for easy movability		
3.	**Capacity**	Capacity: 250 L or higher with a combination of sealed 5-7 pullout drawers / shelves of different sizes that can be adjusted for storage flexibility		

4.	**Temperature**	• Range - 10 ~ - 20 °C with temperature controller • Digital temperature display • LED Display for temperature and temperature history which can be downloaded via a USB port • Calibration facility		
5	**Alarms**	Acoustic/visual Safety alarms for • High/low temperature, • door ajar and • malfunction system alarms		
6.	**Optional Accessories**:	Racks for 50 mm boxes (incl. dividers), Racks for 75 mm boxes (incl. dividers)		
7	**Voltage stabilizer**	Suitable and compatible voltage stabilizer		
8	**Calibration**	Certificate from an ISO 17025 accredited lab for 3 different temperature points.		
9	**Operation and training component**	• The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction		
10	**Certificates Performance and safety standards (specific to the device type);Local and/or international**	• Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2- 40 for safety		
11	**Supplier/ Manufacturer**	• Must be ISO certified for quality		
12	**Service Support Contact details (Hierarchy Wise; including a toll free/landline number)**	• Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;		
13	**Recommendations or warnings**	• Any warning signs would be adequately displayed		

14	**Warranty**	• Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
15	**Service contract clauses, including prices**	• List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
16	**Operating manuals, service manuals, other manuals**	Should provide 2 sets(hardcopy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection		

10. UV-VIS Spectrophotometer

S no.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification **(Yes/No)**	Specify Make and Model
1	**Application**	UV-Vis The system should be capable to measure the all colorimetric based parameters in food and water samples as per FSSAI requirements including Enzyme assays, Kinetic assays and scans		
2	**System**	A fully automated spectrophotometer with double beam optics with pre-programmed applications using conventional quartz / glass/plastic cuvettes with all the required accessories.		

3	**Operation keys**	1. Instrument should operate immediately after switch on with no warming up time 2. Should be automatically programmed with on-board touch screen & soft keys 3. Capable to store method with analysis:> 100 method programs on the instrument, > 1000 results with data, evaluation results and used parameters		
4.	**Optical Design**	• Double Beam with sample and reference cuvette positions; Czerny-Turner Monochromatic/Holographic grating with sealed optics • Reference Compartment Should accommodate cells up to 10 mm path length as standard feature		
5	**Light Source**	• Halogen lamp for Visible range and Deuterium Lamp for UV range or Xenon Flash Lamp • Light source should be auto automatically selected as per wavelength required.		
6	**Detector**	Silicon Photodiode dual detector/PMT		
7	**Scan Ordinate Modes**	Absorbance, % Transmittance, % Reflectance		
8	**Resolution**	0.1nm or better.		
9	**Wavelength Range**	190 –1100 nm		
10	**Wavelength Accuracy**	± 0.3nm or better for entire range		
11.	**Wavelength Repeatability**	± 0.1nm or better		
12.	**Scanning Speed**	Selectable Variable wavelength scan rate 1nm/min to 3000 nm/min or better		
13	**Spectral Bandwidth**	Variable(0.1/0.2/0.5/1/2/5/10) nm		
14.	**Photometric Range**	≥ 3.5A or better		
15	**Photometric Accuracy**	0.5 A: ± 0.004A or better; 1A: ± 0.006A or better; 2A: ± 0.010A or better.		
16	**Stray Light**	KCl, 198 nm: = 1 % T or better NaI, 220 nm: = 0.05 % or better NaNO2, 340 nm = <0.05 % or better		
17.	**Noise**	0A: ≤ 0.00006 A or better at 500 nm/700 nm		

18.	**Drift**	< 0.0005 A/hr (500 nm, 1 hour warm-up)		
19	**Baseline flatness**	± 0.0005 Abs or better		
20	**Application Software**	In built Software with large LCD display should be user friendly & simple for data handling with feature like easy to use report generator, real time display of concentration, time scan, photometric mode, single/multi-wavelength , capability for event recording (e.g., addition of reagents). Should be able to connect a USB keyboard, mouse and printer for operational convenience. Software should have built in or provision to build : a. Methods: • Absorbance with one or more wavelengths, • Scans, Nucleic acids, Proteins, OD 600, • Evaluation: via factor, standard and calibration curve • Dual wavelength with subtraction and division evaluation b. Method dependent evaluation: • Absorbance, concentration via factor and standard • Concentration via standard series using Linear regression, Nonlinear regression with 2nd and 3rd degree polynomials • Spline analysis, • Linear interpolation (point to point evaluation) • Absorbance allocation via subtraction and division • Ratio 260/280, 260/230, Molar concentration and total yield for nucleic acids. **The software should be 21CFR part 11 compliant**.		
21	**Accessories and spares**	• One pair each of 1 and 3 ml quartz cuvettes 10 mm path length • One pair each of 1 and 3 ml glass cuvettes 10 mm path length • Cuvette holder • Holmium oxide glass filters for wavelength calibration.		

		• NIST traceable Potassium dichromate		
22	**Computer and printer**	Latest configuration factory set branded PC system with 22-23'' Full HD Monitor with printer –B/W – duplex- laser-legal,A4 - 1200dpi-up to 21 ppm –capacity with network card		
23	**UPS**	Suitable UPS with 60 mins backup power		
24	**Calibration**	Certificate from an ISO 17025 accredited lab spectral calibration.		
25	**Compliance**	**IQOQPQ** of instrument and Software should be provided along with document		
26	**Operation and training component**	• The supplier will have to carry out successful Installation at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction		
27	**Certificates Performance and safety standards (specific to the device type);Local and/or international**	• Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) • Certified to be compliant with IEC 61010- 1, IEC 61010-2-40 for safety		
28	**Supplier/ Manufacturer**	• Must be ISO certified for quality		
29	**Service Support Contact details (Hierarchy Wise; including a toll free/landline number)**	• Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;		
30	**Recommendations or warnings**	• Any warning signs would be adequately displayed		
31	**Warranty**	• Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		

32	**Service contract clauses, including prices**	• List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
33	**Operating manuals, service manuals, other manuals**	Should provide 2 sets(hardcopy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection		

11. Binocular Microscope

S no.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification(Yes/No)	Specify Make and Model
1	**Application**	A System complete with illumination system is required. For view of individual cells, even living ones with high magnification microscope using 2 eye lenses to reduce the eyestrain		
2	**Body**	• Body-Single mold sturdy stable base stand, inclined Binocular body 30 °, 360º rotatable head with focus adjustment controls. • A durable textured acid resistant finish • All optical parts including objectives, eye pieces and prisms should have anti- reflective coating which also gives anti- fungal property. • All metallic parts should be corrosion- proof, acid proof and stain-proof.		

3.	**Eye piece**	• -Highest quality 10 X/20mm wide angle anti fungus field eyepiece. One with pointer. Diopter adjustment must be present on both eye pieces. (the image of the object as seen through the binocular eyepiece should be well defined centrally in at least 2/3 field of view) • Achromatic, wide field, 10 x with inbuilt pointer. • The eyepiece should be aplanatic and have a minimum field number of 18 Diopter adjustment must be present on one/ both eye pieces or on the eye piece tube.		
3.	**Optical system**	• Optical system should be infinity corrected. • Built-in LED light source with white light with intensity control and LED life of more than 10, 000 Hrs.		
4.	**Objective**	• -Parfocal, antifungal coated 4 , 10 , 40 and 100 (oil immersion) with semi planner achromatic correction. • Objective should be well centered even if their position on turret is changed. • 10 and 40 objectives should have numerical apertures of 0.25 and 0.65 respectively. • 100 should have numerical aperture of 1.25 and should be of oil immersion. • Unbreakable containers to be provided for storing the objectives. • All objectives should be wide field, achromatic and par focal.		
5.	**Nose piece**	• Backward tilted revolving nose piece suitable to accommodate four objectives with click stop • . It should be provided with rubber ribbed grip for easy rotation mounted on a precision ball bearing mechanism for smooth and accurate alignment. Extra ports if any should be fitted with dust& fungal proof metallic/ebonite		

		caps.		
6	**Focusing:**	• . Coaxial coarse and fine focusing knob, capable of smooth, fine focusing movement sensitivity; minimum: 300 micron; focusing stop for slide safety. ..		
7	**Stage**	• Stage uniformly horizontal, mechanical stage having dimensions of length 140 mm (+/- 20mm) with fine Vernier graduations (minimum reading accuracy of 0.1 mm). • It should be designed with convenient sub-stage vertical coaxial adjustment for slide manipulation. • The stage should have ball-bearing arrangement to allow smooth travel in transverse directions i.e. 80 mm (+/- 5mm) and front to back direction, 50mm (+/- 5mm).		
8.	**Sub-stage condenser**	• Abbe-type condenser with numerical aperture (N.A.) 1.25 focusable with rack and pinion arrangement incorporating a spherical lens and an iris-diaphragm		
9.	**Sub-stage illuminator**	• The system should have a build-in variable light source (Illuminator). • This light source should have a 20 W, 6 V Halogen lamps. • The system should be provided with a step down transformer and an on-off switch and intensity control. • The lamp should be provided with a lamp socket which has the facility for easy replacement of the bulb		
10.	**Power supply & protection**	• Voltage 220 V AC, 50Hz. should have one on-off power switch • A plano-concave mirror in fork mounting should be supplied which would be attachable to the base for field use when power is not available. • Should have over-charging		

		cut-off with visual symbol		
11	**Battery backup**	• Minimum 1 Hour		
12	**Operating and storage conditions**	• Capable of operating continuously in ambient temperature of 10 to 50 ° C and relative humidity of 15 to 90% in ideal circumstances. • Storage condition: Capable of being stored continuously in ambient temperature of 0 to 50 °C and relative humidity of 15 to 90%		
13	**Manual Accessories**	• Working manual should be provided with each microscope. • Immersion oil 25 ml 2 • lens tissue paper 2 rolls or boxes) • Lens cleaning solution (100 ml) • One anti-static cleaning brush. • The unit shall be capable of being stored continuously in ambient temperature of 0 -50 deg C and relative humidity of 15-90%.		
14.	**Digital camera**	• 5 megapixel scientific grade (even at dim light) colour CCD camera along with image capture and analysis software and c-mount adapter. Resolution at least 2448 x 1920 effective pixel (4 x 4 binning and 2 x 2 binning) and 10 bit digitization. Microscope should come along with PC (i5 6200U processor, 6 GB RAM, 1 TB HDD, DVR R/W, LED 20”). With UPS (minimum offline backup of 30 minutes).		
15	**Certificates Performance and safety standards (specific to the device type);Local and/or international**	• Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • TVU Cert • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40		

		for safety		
16	**Supplier/ Manufacturer**	• Must be ISO certified for quality		
17	**Service contract clauses, including prices**	• List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
18	**Operating manuals, service manuals, other manuals**	Should provide 2 sets(hardcopy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection		
19	**Warranty**	• Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
21	**Operation and maintenance training**	The supplier will have to carry out successful installation at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system.		

12. Howard Mold Counter

S. No	Specification	Requirement	Please Specify whether the quoted model/items meets the specification(Yes/No)	Specify Make and Model

1.	**Application**	It is use in determining mold counts (is used mold fibres and spores) in tomato products and for mold counting in food quality control applications for other fruit based preparations and **mold** mycelia in butter and cream..		
2.	**Counting chamber**	Constructed entirely of glass. Centre of glass should contain a 15x20mm rectangle that is flanked by 0.1 mm shoulders on each side to support cover glass Rectangle and Cover glass should have optically plane surfaces Facilities for calibration of microscope		
3.	**Eyepiece micrometer**	Ruled into squares (grid), each of which is equal to1/6 of the diameter of the eyepiece diaphragm opening		
4.	**Cover slips**	Thin 28mm x 33mm x 0.5mm 2 Nos Thick 28mm x 33mm x 1.0mm 2 Nos		
5.	**Certificates Performance and safety standards (specific to the device type); Local and/or international**	• Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • TVU Cert		
6.	**Service contract clauses, including prices**	• List of all spares and accessories (including minor) with part numbers and price, required;		
7.	**Demonstration and training**	The supplier will have to carry out successful demonstration at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system till customer satisfaction with the system.		
8.	**Certificates Performance and safety standards (specific to the device type);Local and/or international**	• Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards.		
9.	**Warranty**	• Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		

13. Refrigerated Centrifuge

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.	**Application**	A Multi-functional, general purpose High speed refrigerated bench top centrifuge with both fixed angle and swinging bucket rotors for sedimentation of samples with easy lift and safety lid		
2.	**Base unit**	• Table top centrifuge with maintenance free brushless motor and have low access height • CFC free refrigerant • LCD Digital Display of time, speed and Temperature and run conditions • Compatible with all fixed angle and swinging bucket rotors • **Automatic rotor recognition facility** • Automatic imbalance detection and cut-off • Should be programmable with easy preset programs for fast temperature for pre- cooling and short spin. • Should have motorized lid lock system		
3.	**Temperature range**	• -5ºC to 40 ºC		
4.	**Speed**	• Maximum speed: 15000 rpm or 20000 RCF with 6 x 50 mL Fixed angle rotor or better		
5.	**Rotors**	1. **Fixed Angle Rotor** for 6 50 ml Falcon tube with 8 adapters for 15 mL conical bottom culture tubes/falcon/oak ridge 2. **Rotor for 1.5-2.0 mL** Eppendorf tubes (24 places or better) and ada**ptors** for 0.2 and 0.5 mL tubes 3. **Deep-well micro plates r**otor (Four 96 well plates **4. Swing out rotor:** • Should have at least 4 x 100 ml of capacity Maximum RCF produced should be 3200 x g or above Four buckets should be provided		

		(either round or rectangular buckets) • Adapters for 15 ml conical bottom centrifuge tubes & 50 ml conical bottom centrifuge tubes should be provided (two adapters for 6 or 8 x15 ml and two adapters for 2 or 4x50 ml) • Rotor and buckets should be autoclavable**.** • **All rotors should be autoclavable**		
6.	**Centrifuge tubes**	• Suitable 15 mL auto-clavable screw capped tubes -24 Nos • Suitable 50 mL auto-clavable screw capped tubes -24 Nos		
7.	**Power requirement**	• 220 v to 240 v -50 Hz If a voltage stabilizer is required, it should be supplied along with the unit		
8.	**Voltage stabiliser**	• Suitable voltage stabilizer to be provided		
9.	**Certificates Performance and safety standards (specific to the device type);Local and/or international**	• Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety		
10.	**Supplier/ Manufacturer**	• Must be ISO certified for quality		
11.	**Service contract clauses, including prices**	• List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
12.	**Operating manuals, service manuals, other manuals**	Should provide 2 sets(hardcopy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine		

		maintenance; • Service and operation manuals (original and copy) to be provided; Advanced maintenance tasks documentation; • Certificate of calibration and inspection		
13.	**Warranty**	• Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
14.	**Operation and maintenance training**	The supplier will have to carry out successful installation at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system.		

14. BOD Incubator

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.	**Application**	For use in microbiological laboratories to measure biochemical oxygen demand (BOD) . The incubators are used to sustain and control the humidity and temperature essential to perform many types of experiments in, microbiology and biology cells.		
2.	**Double walled modular structure with 3" thick PUF insulation**	i) Outer wall: Powder coated steel sheet with resin baked finish ii) Inner wall: Stainless steel* with ribs for adjusting removable perforated shelves at the height of 45 mm. The nuts, screws and hinges of the inner chamber shall be of Stainless Steel*. (*SS Grade X07Cr18Ni9 of IS 6911 : 1992 or equivalent) iii) Perforated Stainless Steel*Partition tray (6 nos.)		

3.	**Doors**	Double door type • Inner Door: Full view inner acrylic door with aluminum channel boundary, closes on a resilient gasket and permits view of the specimens (inside the Incubator), without disturbing the thermal conditions inside the chamber. • Interior illumination • Outer Door: Powder coated steel sheet with resin baked finish		
4.	**Capacity**	• 300-400 Litres		
5.	**Temperature Range**	• 5°C to 60°C with digital controller, • Temperature increments 0.1° C		
6.	**Temperature Control Accuracy**	• ± 0.5 °C or better (at 60°C).		
7.	**Distribution Accuracy/uniformity**	• ± 1 °C or better (at 37°C).		
8.	**Temperature display**	• Microprocessor based Digital display of temperature along with calibration certificate by ISO17025 accredited agency. • Temperature recorder for inner chamber with maintenance free battery backup and auto charging of battery		
9.	**Air circulation**	• With two completely in built motors along with fan to keep the temperature uniform throughout the chamber		
10.	**Heat up time & Cool Down time**	• 30 min. up to 60 ° C without load. • 40 min. up to + 5 ° C without load		
11.	**Timer**	• 0 to 24 hrs X 7 days cyclic ON / OFF timer for illuminating port		
12.	**Safety Alarms**	Provision for audio-visual alarm to indicate • Door opening after 2 min. • Self -diagnosis function including overheat • Prevention and overcurrent Protection		
13.	**Computer Interface**	RS 485 / RS232 interface for multiple & single communication port		
14.	**Voltage stabilizer**	Automatic Stabilizer, 4 KVA with TDR (3minutes) electronic type		
15.	**Documents Certificates Performance**	• Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should		

	and safety standards (specific to the device type);Local and/or international	have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety • Complete with IQ, OQ, PQ, Documents, Operations and Maintenance manuals		
16.	**Supplier/ Manufacturer**	• Must be ISO certified for quality		
17.	**Service contract clauses, including prices**	• List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
18.	**Operating manuals, service manuals, other manuals**	Should provide 2 sets(hardcopy and soft- copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection		
19.	**Warranty**	• Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
21.	**Operation maintenance& training**	The supplier will have to carry out successful installation at our laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for scientific personnel operating the system and support services till customer satisfaction with the system.		

15. Micro Filtration Unit

S. No.	Specifications	Requirement	Please Specify whether the	Specify Make and Model

			quoted model/items meets the specification (Yes/No)	
1.	Application	Used for the collection and preparation of samples, mobile phases, and buffers to obtain the highest quality results from downstream analysis		
2.	Stainless Steel Vacuum Filter Holders	Analytical Filter Holders for 47 mm Disc filter with suitable silicon cork		
3.	Filtering Flasks	Side arm connects to vacuum source with 3/8in.		
4.	Filter Forceps	Highly polished stainless steel forceps blades with beveled, un- serrated tips to prevent damaging the membrane filter.		
5.	Oil less vacuum pump	Flow rates of up to 17 L/min with hydrophobic filter to protect the pump. Noise level below 55 dB		
6.	Membrane Filters	Filters 47mm, 0.45 um (1000 Nos.) for a) Aqueous solvents b) Hydrophobic solvents		

16. Digital pH meter

S no.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.	**Application**	For research with a comprehensive range of features and functions, making it suitable for general laboratory, QC and GLP based applications.		
2.	**Unit**	**Consisting of** Tri-combination pH/ATC electrode with an electrode holder/arm with smooth movement and protection cover		
3.	Working pH Range	0 – 14 pH		
4.	pH resolution	± 0.01 pH		

5.	Mv	• Range 0 - ± 1999 • Accuracy± 1mV • Resolution 1 mV		
6.	Temperature Compensation	0 to 100 ° C with ATC		
7.	Temperature	Range -10 to +105°C Resolution 0.1°C Accuracy ±0.5°C ATC range 0 to 100°		
8.	Calibration Points	• Should have 3 stage calibration with auto buffer recognition • NIST traceable buffer set 500 ml each (pH 4.0, 7.0 & 9.0).		
9.	Alarm	• Calibration reminder interval (1 to 999hrs)		
10.	Temperature Compensation	• Automatic		
11.	Display	• Backlit blue LCD with operation icon • digital display with 0.001 pH unit readability		
12.	Accessories	• Extra Electrode • NIST Standard buffer solution (pH 4.0, 7.0, 10.01 x 500ml for each bottle) • standard electrode holder • Ac /DC Adaptor.		
13.	Power	• 9V DC		
14.	Data storage& Output	Data storage facility and record maximum and minimum value. • RS.232C output and supply Data connector cable.		
15.	Documents Certificates Performance and safety standards (specific to the device type);Local and/or international	• Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety • Complete with IQ, OQ, PQ, Documents, Operations and Maintenance manuals		
16.	Supplier/ Manufacturer	• Must be ISO certified for quality		
17.	Service contract	• List of all spares and accessories (including minor) with part numbers		

	clauses, including prices	and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
18.	Operating manuals, service manuals, other manuals	Should provide 2 sets(hardcopy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; ; • Certificate of calibration and inspection		
19.	**Warranty**	• Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		

17. Fumigator

Sl. No.	**Specifications**	**Requirement**	**Please Specify whether the quoted model/items meets the specification (Yes/No)**	**Specify Make and Model**
1.	**Capacity**	• 5 liters with easy cleaning facility		
2.	**Material of construction**	• Body should be compact, durable, leak proof and made of stainless steel /heavy duty plastic		
3.	**Particle size**	• It should produce aerosols with particle size of less than 5 microns • The blower head should be rust proof inert to Formaldehyde, KMnO4, H2O2 and deliver aerosols uniformly.		

4.	**Unit**	• It should be compatible with all disinfectant solutions usual concentration. • It should be compatible with maximum pH range (both acid and alkali). • The equipment should be of good quality and conform to national/ international standards.		
5.	**Power supply**	• The machine should operate on 220 +- 10 volts, 50 Hz, single phase, A.C • Provided with Cable should be at least 5 meters in length, ISI marked.		
6.	**Operation**	• The discharge rate should not be less than 1Liter/25 minutes. • The tank capacity, discharge rate and timer on the machine should be so that the disinfectant should be able to disinfect 4000-5000 cubic feet in one cycle of 2 hours (max).		
7.	**Operation and training component**	• The supplier will have to carry out successful demonstration at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction		
8.	**Warranty**	• Warranted for 03 years after satisfactory working excluding consumable parts and accessories.		
9.	Service contract clauses, including prices	• List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
10.	Operating manuals, service manuals, other manuals	Should provide 2 sets(hardcopy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation;		

18. UV Viewing Cabinet

	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.	**Application**	Eyes are protected by the UV filter in the viewing window and used for inspecting thin-layer chromatograms or other objects under UV light in absence of ambient light**.**		
2.	**Unit**	• User-safe, self-contained chamber with Convenient handling • Clear **viewing** window (open/close via hinged door) through button operation for each of two UV tubes • Homogeneous illumination of chamber		
3.	**Viewport**	• Soft rubber viewport and contrast control filter that absorbs UV energy to protect the eyes		
4.	**UV tubes**	Two UV tubes for illumination each 8W • **Long-wave UV light 366 nm** • **Short-wave UV light 254nm**)		
5.	**Safety timer**	User safety through tilt sensor and timer (automatic switch- off after 10 min)		
6.	**Operation and training component**	• The supplier will have to carry out successful demonstration at the laboratory premises (where ever the system has to be installed) and provide on – site comprehensive training for a minimum of two scientific personnel operating the system till customer satisfaction		
7.	Certificates Performance and safety standards (specific to the device type);Local and/or international	• Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety		

8.	Supplier/ Manufacturer	• Must be ISO certified for quality		
9.	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	• Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/ad-hoc) to be declared by the manufacturer;		
10.	Recommendations or warnings	• Any warning signs would be adequately displayed		
11.	**Warranty**	• Warranted for 03 years after satisfactory working excluding consumable parts and accessories.		
12.	Service contract clauses, including prices	• List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
13.	Operating manuals, service manuals, other manuals	Should provide 2 sets(hardcopy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation;		

19. Anaerobic Jar (Anaerobic Jar Filling System)

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model

1.		The Anaerobic Jar Filling System is develop so to achieve anaerobic atmospheric condition inside the Jar in less than 1 minute. Create atmosphere suitable for the culture of anaerobic as well as Microaerophilic bacteria. To achieve quick Anaerobic / Microaerophilic conditions, used unique vacuum technology along with purging technology. No additional chemicals are needed to achieve an anaerobic / microaerophilic condition. Touch screen Display protected with security password. Touch screen display allows to control modified purging and vacuum time by end user. User friendly, through programmable touch screen display, Automatically managed draining and filling of gases. Simple assembly, easy to connect from Jar to System & Disconnect (Vice Versa). Alternative gases like Nitrogen or gas like combination of CO_2 , N_2 or Co_2, N_2 with 5 % H_2 can also be connect.		
2.	**Dimensions (W /D / H)**	200 mm X 400 mm X 350 mm		
3.	**Power Supply**	230 V		
4.	**Gas Supplies**	N2 and ANO2 (CO2:H2:N2)(10:5:85)		
5.	**Pressure**	150 kg / cm2		
6.	**Touch Screen Display**	HMI Type L 90 mm x D 50 mm		
7.	**Salient Features**	• Quick & Convenient Solution • Anaerobic Condition achieved within 1 Minute • Touch Screen LCD Display • User Friendly • Simple Assembly with Alternative Users Option		
8.	**Warranty**	Warranted for 03 years after satisfactory installation and working excluding consumable parts and accessories.		
9.	**Service contract clauses, including prices**	List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		

10.	**Operating manuals, service manuals, other manuals**	Should provide 2 sets(hardcopy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; • List of equipment and procedures required for local calibration and routine maintenance; • Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation; • Certificate of calibration and inspection		

20. Hot Air Oven

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.	**Application**	For drying glassware and also for conditioning of heat sensitive media and to provide an optimal, homogeneous, temperature uniformity and stability to ensure drying is complete		
2.	**Material of construction**	• Should have double walled construction, with high quality insulated steel. Inner walls of 304 qualities SS, Outer walls of Epoxy Powder coated GI sheets. • Facility for adjustable shelves, 10 removable shelves to be provided. • With internal lighting facility, Insulated door fitted with heavy hinges, mechanical door lock.		
3.	**Capacity**	• Approx. 200 liters		

4.	**Temperature range**	• Temperature should be thermostatically controlled • It should be Ambient +5°C to 250°C with temperature setting accuracy ±0.5 °C with forced air circulation for temperature uniformity • Separate PT 100 sensor and display for temperature (LED) • Safety alarms		
5.	**Unit**	• Air ventilators to be provided on both side • The equipment should be provide with microprocessor controlled digital display • Temperature homogeneity between top and bottom shelves should be maintained by forced circulation		
6.	**Calibration**	• Certificate from a ISO 17025 accredited lab for 3 different temperature points		
7.	**Power supply**	All electrical peripherals required for smooth functioning e.g. voltage stabilizers should be provided.		
8.	**Accessories**	• Should have all the accessories required for the functioning of the equipment.		
9.	**Certificates Performance and safety standards (specific to the device type);Local and/or international**	• Should be FDA/CE/BIS approved product. • Manufacturer and Supplier should have ISO 13485 certification under ISO 9001for quality standards. • Electrical safety conforms to the standards for electrical safety IEC 60601- General requirements(or equivalent BIS Standard) • Certified to be compliant with IEC 61010-1, IEC 61010-2-40 for safety		
10.	**Supplier/ Manufacturer**	• Must be ISO certified for quality		

11.	**Service Support Contact details (Hierarchy Wise; including a toll free/landline number)**	• Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/adhoc) to be declared by the manufacturer;		
12.	**Recommendations or warnings**	• Any warning signs would be adequately displayed		
13.	**Warranty**	• Warranted for 03 years after satisfactory working excluding consumable parts and accessories.		
14.	**Service contract clauses, including prices**	• List of all spares and accessories (including minor) with part numbers and price, required for maintenance and repairs in future after guarantee/warranty period should be attached;		
15.	**Operating manuals, service manuals, other manuals**	Should provide 2 sets(hardcopy and soft-copy) of:- • User, technical and maintenance manuals to be supplied in English language along with machine diagrams; Service and operation manuals (original and copy) to be provided; • Advanced maintenance tasks documentation;		

21. Micropipettes (*6 No's)

Sno.	**Specifications**	**Requirement**	**Please Specify whether the quoted model/items meets the specification (Yes/No)**	**Specify Make and Model**
1	**Material**	Liquid handling equipment, Autoclavable		
2	**Capacity /Volume**	20-200 micro liter (Variable) 100-1000 micro liter (Variable) 1-10ml (Variable) *2 each		
3	**Feature**	• Single – channel/manual • Volume lock to prevent		

		driffting		
4	**Accessory**	Tips, Tip boxes		
5	**Calibration**	Certificate from ISO17025 accreditated lab for 3 points		
6	**Warranty**	03 years		

22. Carbon dioxide Incubator

S. No.	Specifications	Requirement	Please Specify whether the quoted model/items meets the specification (Yes/No)	Specify Make and Model
1.	**Capacity**	45 litres or above		
2.	**Display**	LCD/LED		
3.	**Chamber Material**	Single mold 304 grade joint less stainless steel		
4.	**Processor**	microprocessor		
5.	**Heating type**	Air/Direct Heat		
6.	**No. of shelves**	2-3 minimum		
7.	**Temp. control range**	0 - 80^{O}C		
8.	**Ambient temp. range**	5 ^{O}C above ambient to 50 ^{O}C		
9.	**Temp. control accuracy**	± 0.1		
10.	**Temp. uniformity**	± 0.3		
11.	**CO_2 sensor**	IR sensor		
12.	**CO_2 control range**	0.1-20%		
13.	**CO_2 stability**	± 0.1%		
14.	**CO_2 recovery time**	0-10 min		
15.	**CO2 tank switch/alarm**	Yes		
16.	**Temp. recovery**	5-15 min		
17.	**O_2 control**	Yes		

	system			
18.	**O_2 Range**	0-20%		
19.	**O_2 accuracy**	± 0.2%		
20.	**O_2 sensor**	yes		
21.	**Humidity**	95±5%		
22.	**Humidity recovery**	10-20 min		
23.	**Alarm**	Audio & visual		
24.	**Stacking**	Possible		
25.	**Cylinders**	CO_2 cylinders (2 nos.); Capacity- 9-10kg; Purity- 98.00%		
26.	**Communication port**	Yes		
27.	**Power**	AC 230V/6A, 50Hz		
28.	**Power consumption**	500-600W (max.); 50-100W at $37^{O}C$		
29.	**Disinfection**	Multiple will be preferred		
30.	**Calibration**	Certificate from NABL accreditated lab for 3 points		
31.	**Warranty**	03 years with user manual		

23. Frost free Two Door (side by side) Refrigerator

S.No.	**Specifications**		**Please Specify whether the quoted model/items meets the specification (Yes/No)**	**Specify Make and Model**
	Material Stainless steet			
1	Capacity	Approx. 500 liters and above		
2	Adjustable Shelves	Tempered glass shelves 05 No.		
3	Temperatur e Range	Digital display and temperature controls Refrigerator $+2^{O}$ to $+8^{O}C$ Freezer $-20\ ^{O}C$		
	Audio alarm	Alarm is door is ajar for long		
4	Inner body	Rust Free Material		
5	Refrigerant	CFC / HCFC Free		
6	Frost Free			
7	Door Lock & Interior light			
8	Same Temperature: Top to Bottom			

9	Microprocessor based Temperature Controller with Digital Display		
10	In builtVoltage Stabilizer High/Low cut with timer delay		
11	Door Glass Heater for special heated front glass that enhances visibility and prevents unhygienic condensation		
12	Warranty: 03years and Life time on motor		

24. Microbiological Media and Consumables

Sl. No.	MEDIA(Quote should be for unit pack)	Yes/No
1	Acetate Agar	
2	Baird Parker Agar	
3	Bismuth Sulphite Agar	
4	Brain Heart Infusion Broth	
5	Brilliant Green Lactose Bile Broth 2%	
6	Bromocresol Purple Carbohydrate Broth	
7	Buffered Peptone Water	
8	Butterfield's Buffered Phosphate Diluent	
9	Cooked Meat Medium	
10	Carbohydrate Utilization Broth	
11	Czapek Yeast (Autolysate) CYA agar	
12	Decorboxylase Test Medium (Lysine, Ornithine, Arginine provide separtely)	
13	Dextrose Tryptone Agar	
14	EC Broth	
15	Egg Yolk Tellurite Supplement	
16	Frazer Broth	
17	L- EMB Agar	
18	Gelatin Phosphate Salt Broth	
19	Gram Negative Broth (GN)	
20	Hektoen Enteric Agar	
21	Hough & Liefson Medium	
22	Half Frazer Broth	
23	Klinger Iron Agar	
24	Koser's Citrate Broth	
25	Lactobacillus MRS Agar	
26	Lactose Broth	
27	Lactose Gelatin Medium	
28	Lauryl Tryptose Broth	
29	Liver Broth	
30	Lysine Iron Agar	
31	Macconkey agar	
32	Malonate Broth	
33	Malt Agar	

34	Motility Test Medium	
35	MRVP Broth	
36	MYP Agar	
37	Modified Oxford Agar	
38	MY-40 Agar	
39	Nitrate Broth	
40	Nutrient Broth	
41	Nutrient Agar	
42	Peptone Water Diluent	
43	Plate Count Agar	
44	Phenol Red Carbohydrate Broth	
45	Potato Dextrose Agar	
46	Pseudomonas Presumptive Test Broth	
47	Psuedomonas confirmation medium (Skim Milk Agar)	
48	Palcam Agar	
49	Phosphate Buffered peptone water	
50	Selenite Cystine Broth	
51	Sheep Blood Agar	
52	Sulphite Agar	
53	Tetrathionate Broth	
54	Thiosulfate-Citrate-Bile Salts-Sucrose Agar (TCBS)	
55	T1 N1 Agar	
56	Thioglycollate Agar	
57	Tryptone Glucose Extract Agar	
58	Triple Sugar Iron Agar	
59	Tryptone Broth	
60	Trypticase Soy Broth	
61	Tryptose-Sulfite Cycloserine (TSC) Agar	
62	Urea Broth	
63	Violet Red Bile Agar	
64	Xylose Lysine Deoxycholate Agar (XLD)	

PART IV- SPECIAL CONDITIONS OF RFP

4. **Payment Terms:** The payment will be made as per the following terms on production of the requisite documents:

S.N.	Amount to be paid, INR	Condition(s) for release
Part A		
1	80 % of the cost of equipment	On satisfactory installation and commissioning of the equipments
2	Balance 20% of the cost of equipment	On satisfactory installation, commissioning of the equipments, successful demonstration of the facility, training and validation
Part B		
1.	100% of the total cost of civil and electrical works	Running Bill after certification by FSSAI Civil/Electrical Empaneled Engineer
Part C		
1.	Manpower	The payment in respect of manpower will be released on half yearly basis, after it becomes due.

7. **Force Majeure clause :-**

(a) Neither party shall bear responsibility for the complete or partial nonperformance of any of its obligations (except for failure to pay any sum which has become due on account of receipt of goods under the provisions of the present contract), if the non-performance results from such Force Majeure circumstances as Flood, Fire, Earth Quake and other acts of God as well as War, Military operation, blockade, Acts or Actions of State Authorities or any other circumstances beyond the parties control that have arisen after the conclusion of the present contract.

(b) In such circumstances the time stipulated for the performance of an obligation under the present contract is extended correspondingly for the period of time of action of these circumstances and their consequences.

(c) The party for which it becomes impossible to meet obligations under this contract due to Force Majeure conditions, is to notify in written form the other party of the beginning and cessation of the above circumstances immediately, but in any case not later than 10 (Ten) days from the moment of their beginning.

(d) If the impossibility of complete or partial performance of an obligation lasts for more than 4 (four) months, either party hereto reserves the right to terminate the contract totally or partially upon giving prior written notice of 30 (thirty) days to the other party of the intention to terminate without any liability other than reimbursement on the terms provided in the agreement for the goods received.

PART V- EVALUATION CRITERIA & PRICE BID ISSUE

2. **Price Bid Format :** The Price Bid Format is given below and Bidders are required to fill this up correctly with full details, as required under Part-II of RFP :-

Cost Details

Sl. No.	Instruments/Consumables	Qty	Price in INR
1	Laminar Air Flow	01	
2	Bio Safety Cabinet Class II Type B2 (Total Exhaust)	01	
3	Autoclave Vertical	02	
4	Incubators: 1) Ambient to 70 °C and 2) 5 °C to 50°C	02	
5	Digital Colony Counter	02	
6	Lab Blender	01	
7	Water Bath – Serological	01	
8	Analytical Balance	02	
9	Upright Frost Free Vertical Deep Freezer (-20 °C)	02	
10	UV-Vis Spectrophotometer	01	
11	Binocular Microscope	01	
12	Howard Mold Counter	01	
13	Refrigerated Centrifuge	01	
14	BOD Incubator	02	
15	Micro Filtration Assembly	01	
16	Digital pH Meter	02	
17	Fumigator	01	
18	UV Viewing Chamber	01	
19	Anaerobic Jar	02	
20	Hot Air Oven	02	
21	Micropipette	02 sets (06each)	
22	Carbon di oxide incubator	01	
23	Frost Free Double door (side by side)Refrigerator	02	
24.	(i) 03 Manpower as per Part C of Part II of RFP for 01st year		
	(ii) 03 Manpower as per Part C of Part II of RFP for 2nd year		

	(iii) 03 Manpower as per Part C of Part II of RFP for 3rd year	
25.	Total Cost(Excluding Taxes and Duties)	

Note1:

(a) The financial bid has to be filled necessarily in the format given above and has to be signed by the authorized representative of the bidder with full name designation and seal on each page. **The price of each item has to be quoted separately**. The above quote should include Clearing and Transportation charges.

(b) **This project is a turnkey project.** The bidder has to quote price for all the items mentioned above. In case bidder fails to quote price for all the items his bid will not be considered for evaluation. Consortium is allowed as a single entity or a subsidiary.

(c) Price quoted should be valid for minimum 36 months from the last date of submission of the bids.

(d) Explanatory notes, if so desired, can be separately submitted along with the financial bid but financial bid in the above format is required to be submitted.

(e) Please indicate separately any duties, taxes.

Note 2 : Determination of L-1 will be done based on Net amount (not including levies, taxes and duties levied by Central/State/Local governments such as excise duty, GST, Octroi/entry tax, etc. on final product) of all items/requirements as mentioned above.

Signature of tenderer_____
Name in Block letter _____
Date _____

Capacity in which Signed_____

sd/-
(Nilesh Kumar Ojha)
Assistant Director(QA)

Annexure VII

SPECIFICATIONS FOR CLEAN ROOM -BIOSAFETY CONTAINMENT LEVEL 2 WITH NEGATIVE PRESSURE

General Features: Bio-safety Level-2 containment shall comply BSL-2 requirements including negative pressure, HVAC system and air compressor, supply and exhaust HEPA filter system, all controlled by Customized control panel with centralized Supervisory control and data acquisition (SCADA) or Omron based nerve centre, PUF/ Sandwiched specialized partitions, PUF sandwiched walk-able ceiling, epoxy joint less floors with radius coving and round corners. The bidder shall be responsible to construct BSL-2 plus containment in line with design lay out enclosed as annexure-I, its fabrication and technical support at site, supervision of other construction, air balancing, testing and commissioning. Technical and operation documentation should be provided by the bidder and the bidder will be responsible for ensuring the satisfactory performance of BSL-2 Containment by executing different tests such as: - i) Wall panels check for integrity and leakage check ii). HEPA filter leak test according to the US Federal Standard 209E.iii) Room differential pressure test verification, iv) Particle test for cleanliness according to US Federation 209E; v). Air pattern smoke test.; vi) Air velocity test; vii) Light intensity test; viii) Noise test etc.
Technical specifications:
1.0 Heating, Ventilation and Air Conditioning (HVAC) system
i. Combined type air handling unit (tonnage as per the space) with temperature control from 20- 26^{o}C and relative humidity value control from 50% -70%
ii. Independent supply & exhaust blower including one exhaust fan
iii. Unidirectional inward air flow with 70% recirculation and 30 % exhaust
iv. Air Handling Unit Re-circulatory type (1.0 no) with temperature & humidity control for Pathogen Detection Room (Tonnage as per the space) with part supply to corridor
v. Air Handling Unit Re-circulatory type (1.0 no) with temperature & humidity control for Media preparation (Tonnage as per the space)with part supply to media storage, autoclave room and incubation room
vi. Split Inverter Ac's at various locations in the lab as per the area of lab
vii. There must be an adequate exhaust fan in washing area
2.0 Supply & Exhaust High Efficiency Particulate Air (HEPA)
i. Supply & exhaust HEPA filters (Qty-2.0 Nos.) having particle size 0.3 µm particle size with efficiency of 99.97% and efficiency of 99.99 % for > 0.3 µm particle size
ii. All air supply and exhaust should be HEPA filtered
iii. All fresh air ducts and their outer inlets should be installed with insect proof barrier
iv. Pre-filters with thickness of 100 mm should comply American Society of Heating Refrigerating and Air-Conditioning Engineers (ASHRAE) specification of 20-25%

v. 3 stages Pre-filter with ASHRAE specifications -1st stage at 5-8%, 2nd stage at 30% and 3rd stage at 90% efficiency
vi. For ensuring the air bio-safety in the BSL-2 lab, there must be provision of Bag In Bag Out (BIBO) 1.0 Nos. at the exhaust outlets for doing the second filtration of exhaust air flow with HEPA
vii. Supply & exhaust GI fixture (Qty. 2.0 Nos)
3.0 Air Duct: Entire supply and exhaust ducting as well as HEPA housing should be made from G.I. 24 gauge, sealed and air tight
4.0 Negative Pressure Control System
A. Description of room wise differential pressure
i. Negative Pressure Control System (Qty: ONE) in BSL-2 Room (Main Lab) with pressure as negative 20-25 Pa, Cleanliness as Class 100,000
ii. Negative Pressure Control System (Qty: ONE) in Entry Airlocks connected to BSL-2 Room with pressure as negative 10-15 Pa, Cleanliness as Class 100,000
B. Parameters for controlling system
i. The system controller should be controlled via a dedicated SCADA / OMRON based program along with hardware and software in form of centralized Program Logic Control (termed as PLC) or BMS System (Building Management System. and Drives.
ii. Provision of magnetic doors interlocking at BSL-2 lab
iii. The system should adjust the bubble-tight position according to the negative pressure as a feedback signal in form of alarm message at control centre. The system should automatically counteract and adjust the desired negative pressure of the laboratory at the value which is set up
iv. Provision of emergency shutdown when system integrity breaches the correct sequence to prevent positive pressurization of the Lab. The system should be electrically interlocked
v. Automatic Airflow controls- The exhaust air should be controlled by a series of motorized damper, Volume control dampers (VCD's). The pressure differentials across HEPA filters should be measured by pressure differential gauge and its feedback must go into the control software for maintenance and monitoring
vi. Airflow controls on room side-There must be a digital pressure gauge with display for lab personnel to monitor the real time pressure inside BSL-2 lab. Also Manual Pressure gauges (MagnehalicGuages- Compound type) to be maintained on outer side of the lab with a log record maintenance
vii. Air flow at the control side– There must be dedicated SCADA / OMRON based Bio-safety BSL-2 software having controls for negative pressure on display and with alarm
viii. The pressure gauge should indicate the value which is set up before personnel entering the core lab. Two pressure gauges are ensured in the personal changing/airlock room and core laboratory respectively
C. Air change:
i. Air changes should be 25 ± 5 cycle per hour or as required to obtain the desired air quantity standard
5.0 Pass box: In BSL-2 containment **Ventilated Type dynamic Pass boxes** (Qty 3.0 Nos.) complete with motor, blower and **HEPA filter** shall be installed for easy and safe transfer of material with following features
i. All the pass boxes should be made of stainless steel with magnetic interlocks having provision of shortwave UV light for decontamination and continuous-seam interiors to create a hermetically sealed chamber with no cracks or crevices.
ii. The pass box should have following features
a. -Made of 304 stainless steel

b. –Magnetic Door interlocking
c. –Internal Dimension shall be 600x600x600 mm
d. -Equipped with short wave UV light for decontamination
6.0 Air-Tight Damper: Air tight dampers (Qty- 4.0 nos) should be GI and permit airtight criterion for decontamination. The system should be equipped with Bio-airtight damper to control the negative pressure stable
7.0 Manual Damper / Fire Resisting Damper (FRD)
i. Manual VCD airtight dampers (Qty 2.0 Nos) of G.I. make to be mounted along ducting at strategic places for controlling and air balancing in BSL-2 Lab
ii. FRD (Qty 1.0 no) G.I., should be airtight. It will be closed in the air duct for the firefighting when having the fire alarm
8.0 Air Duct Insulation: For insulation purposes of air, G.I. ducting to be cladded with Nitrile rubber /cross linked Polyethylene, 20 mm thickness. The outer exposed supply insulated ducts to be further cladded with Aluminum sheet (0.25 mm thickness) for durability
9.0 Electrical Actuator: Electrical actuators (Qty: 2.0 Nos) shall have the following features
i. Nominal voltage AC 220-240 V 50/60 Hz, DC 24 V. Nominal voltage range AC/DC 19.2 - 28.8 V
ii. Power consumption rate during running 4.0 W and during holding 2.0 W
iii. Wire/transformer sizing 6.0 VA
iv. Max. peak current 2.7 A @ 5 ms
v. Connection cable 1.0 m, 3.0 x 0.75 mm^2
10.0 Smoke Alarm: The BSL 2 containment and other areas around entire lab facility shall also be equipped with smoke alarms (Qty: 15.0 Nos) towards Fire safety. Smoke detectors should have following features:
i. Power supply DC 9.0 V battery or 12V/24V (attention must not use two power supply（ 9.0 V battery and 12.0 V /24.0 V together)
ii. Photoelectric sensor
iii. Red LED indicate alarm
iv. Unique “battery missing” lockout
v. Low battery alarm
vi. High sensitivity
vii. Built in sounder to give a minimum sound output of 95 dB at 3.0 meter
viii. Should senses smoke using the light scatter principle-quick response to visible Smoldering smoke, test button simulates smoke, current ≤10uA, alarm current ≤30.0 mA
11.0 Duct Smoke Detector: The BSL-2 containment should have duct smoke detectors (Qty 2Nos.) with following features:
i. The detector should be photoelectric and capable of operating at 230 Volt AC, or 24 Volt DC photoelectric
ii. Duct Smoke Detectors should provide early detection of smoke and products of combustion present in air moving through an HVAC duct
iii. These devices should have provision of prevention of smoke recirculation in areas by the air handling systems

iv. Fans, blowers and complete systems may be shut down in the event of smoke detection
v. The universal voltage models should be able to operate on any one of four input voltages
vi. Air sampling should be accomplished by two tubes, which protrude into the duct
vii. An exhaust tube of one standard length (7") should be provided with each Duct Smoke Detector
viii. Intake sampling tubes, which must be supplied separately and should be available in three standard lengths
ix. Duct smoke detector mounting should be accomplished by the use of a mounting template and four sheet metal screws, which should be provided with the system
12.0 Differential Pressure Gauge: The BSL 2 containment must have provision of differential pressure gauge (Qty: 2.0 Nos), compound type, having following features:
i. Service: Air and non-combustible, compatible gases.
ii. Wetted Materials: Consult factory. Compound type; Make: DWYER USA or equivalent
iii. Stability: ± 2.5 % F.S. / yr
iv. Pressure Limits: -50-0+ 50 pascal
v. Temperature Limits**:** 20 to 120°F (-6.67 ^{o}C to 48.9°C). Brand: DWYER USA make or equivalent
13.0 Customized Double Door Horizontal Autoclave
i. Double door, interlock. 300L, Approximate size: 1400×890×1742mm
ii. Temperature, pressure, time, running status, and error alarms with dynamic display
iii. Post vacuum drying system
iv. Humidity residue less than 1%
v. Built-in steam generator and micro-computer control
vi. Various programs such as instrument, textile, rubber BD test and leak test should be ensured
vii. Provision with Printer to print date, time and processing
viii. Design pressure: -0.1/0.28Mpa;
ix. Maximum working pressure: 0.23Mpa
x. Vacuum limit: 0.080Mpa;
xi. Accuracy of pressure display: 0.1Kpa
xii. Sterilization temperature: 105^{o}C- 136^{o}C
xiii. Accuracy of temperature display: 0.1^{o}C
xiv. Chamber material: SUS304 stainless steel
xv. The equipment should be validated after installation for decontamination / sterilization of Media / infectious waste

xvi. Autoclave vacuum should be provided with HEPA filter as per biosafety guidelines
14.0 SCADA and PLC system: BSL-2 containment must be provided with a centralized monitor for controlling and displaying all the parameters. The system controller should be controlled via a dedicated SCADA / OMRON based program along with hardware and software in form of PLC's and Drives and should be centralized control termed as PLC System (Program Logic Control)/ BMS System (Building Management System).
15.0 Control Panel
i. It must have facility / control board for indicating the humidity, temperature, pressure and alarms in operation including emergency control
ii. The control panel shall be linked to centralized BMS / PLC system stationed at scientist's Room conveying all the vital parameters like temperature, Pressure, Relative Humidity etc. in real time
16.0 Walls and Partitions:
a. Specialized walls and partitions in negative pressure controlled or classified area: Area A-indicated in the layout
i. Specialized modular PUF sandwiched wall panels GI Powder coated 50 mm thick with a PUF density of 36-40 Kg/m^3
ii. The panels shall be affixed utilizing cam lock arrangement between them
iii. The gaps in between panels to be filled by suitable color matching room temperature vulcanizing (RTV) sealant
iv. The modular panel should be suitable for negative pressure and must be airtight and chemical resistant
v. The partition panel with thickness in the range of 80-90 mm should be made from Specialized modular PUF sandwiched panels of GI Powder coated with a PUF density of 36-40 Kg/m3 and should have a stronger bearing and a mass anti-bending capacity
vi. The modular panel must have capacity of anti-negative pressure between -250 Pa to -500 Pa and should not be deformed in the negative pressure environment
vii. There must be provision of cut-outs on the walls to accommodate double fixture viewing glasses, electrical outlets, monitoring devices, emergency warning systems, pass-thru cabinets
b. Normal wall and partitions in Central Processing Room and Scientists Seating area**:** Area B as indicated in layout
i. Normal wall and partitions shall be half glazed as per the layout having 12.5 mm thick gypsum board both side with total thick ness of 75 mm with glass wool of 24 kg/m^3 density inside
ii. The molding should be finished with melamine polish, fitted with any other fittings and fixtures as may found necessary and painting with synthetic enamel paint of approved brand and manufacture of required color to give an even shade
iii. The brick walls to be enamel painted with smooth texture applying a mm thick coat of approved brand white cement wall putty and finishing with multi surface paint system two or more coats applied on was @ 1.25 liter per 10 sq meter over and including one coat of special primer applied @ 0.75 liter per 10.o sq meter as per attached layout
17.0 False Ceiling

a. All the facility except as indicated in layout
i) The specialized ceiling should be of PUF sandwiched paneled 60 mm thick walk able type
ii) The solid ceiling panels shall be fitted with cam lock frames as required
iii) Ceiling panels must be constructed with either upside or room side, finishing with GI panel as same as the wall panel materials
iv) The solid ceiling panels should be placed side by side and fastened together
v) Covings should be installed on the ceiling to make the ceiling panel airtight and all openings shall be finished with a steel frame fastened in place and sealed from the bottom-end
b. Normal False Ceiling for area as indicated in the layout design
vi) False ceiling of this type will be of suspended ceiling system in 100 sqm area with regular edge glass/mineral wool acoustic ceiling tiles in size 600 x 600 x 14 mm having NRC of 0.9, light reflectance 83% and humidity resistance of 95% laid on WT Grid 15mm galvanized support system consisting of main tee 3000 mm x15 mm x 34mm & perimeter angle suitable to form a matrix of 600x600mm.
vii) Tee cap shall be bake enameled and of 15 mm face width
18.0 Specialized Flooring (Epoxy- Joint Less)
i. The containment must have waterproof and chemical resist epoxy flooring 2+1 mm thick (as per guidelines laid down by WHO) above the base, the floor (for entire Area) should be first covered by epoxy material for waterproof and leveling purpose.
ii. Around the inner perimeter of the walls should be carefully sealed with RTV sealant and all coved wall corner joints should be carefully formed and sealed
19.0 Partition insulation
i. All modular panels used for partitioning and ceiling purposes shall have PUF polymer for insulation in entire facility (Other than Central Processing area, Scientist's Chamber and Cold Room)
ii. There must be a heat preservation by PUF sandwiched layer of 50-60 mm thick having density of 36-40 Kg /m^3 which is suitable for negative pressure
20.0 Covings
i. Covings used to link wall-wall, wall-ceiling, wall-floor, etc. should be made of industrial plastic and shaped by Mould manufacture Smooth radius arc should be installed at all inner, outer of wall-to-wall, wall to floor and wall-to-ceiling joints to form a smooth and continuous round surface for easy cleaning purpose.
ii. All seams should then be carefully sealed with matching RTV silicon sealant
21.0 Corners for Covings
i. Specialized Molded Inner and outer corners linked to wall-wall, wall-ceiling, wall-floor, etc. should be made of industrial plastic and shaped by Mould manufacture
ii. Smooth radius arc should be installed at all inner, outer of wall-to-wall, wall to floor and wall-to-ceiling joints to form a smooth and continuous round surface for easy cleaning purpose

iii. All seams should then be carefully sealed with matching RTV silicon sealant
22.0 Customized Door: Specialized doors as per the requirement to be installed in the controlled area should be powder coated GI sheet PUF sandwiched with observing window, self-closer and handle, lockable, airtight and self-closing type with drop seals
i. Doors should be able to interlock with emergency manual override emergency exit.
ii. Doors should be of Galvanized Sheet, 0.8mm thick, powder coated finish, having viewing window 610 mm x 305 mm, SS “D” Handles, SS hinges and door closers
iii. Doors inside the controlled area (BSL-2 Lab Air lock) should be interlocked
23.0 Sealant: Appropriate quality sealant shall be used to get airtight environment and should include silicone and gasket
24.0 CCTV: CCTV with HD cameras as per the area with following features will be installed to ensure the recording of emergency checkouts in Corridors and BSL-2 lab area
i. 1/3 inch, hemispheric
ii. Input12 VDC
iii. One LED Array, multicolor of full HD LED TV of at least 32" shall also be supplied with for visualization of CCTV cameras
iv. DVR Card 8 input 100 FPS, standalone 8 channel net workable DVR with 1 TB, 1/3” wide angle CCD Dome camera, complete with power cable, video cable conducting with an 18” flat monitor (placed at Scientist room)
25.0 Electrical System: The BSL-2 containment must be supplied with Electrical system having following features:
i. Electrical wires (Havells/ Finolex/ Anchor/ Plaza/ Equivalent) lightings, Philips/Havells electrical boxes
ii. Sockets Brand: Legrand/ Havells , 2 Pole + E, 16A
iii. Lightings: Philips/Havells,3*40W, 2*30W, Low-pressure, mercury discharge, lamps with a tubular,38 mm envelope
iv. Electrical box should be customized according to the actual situation, the modules should be of Schneider/ Havells or equivalent, the breaker and switch should be made of Havells/Anchor or equivalent
v. Lightening should be 400-500 Lux
vi. There will be 15.0-5.0 amp (dual) Sockets (5.0 socket in BSL-2 Lab, 8.0 in Pathogen detection room and 5.0 in rest rooms except cold room) to be connected with instrument tables. Location of the same will be decided at the time of construction
26.0 Communication System: The Containment facility should also be equipped with Intercom and telecommunication system and Internet Network. (Brand: Accord/ Equivalent, UTP; Telephone sets: Binatone/ Panasonic/ Equivalent
27.0 UPS/ Stand by operation: The containment must be supplied with 10 KVA online UPS having 1.0 hour backup

28.0 Compliance to the Standards:
i. WHO, GENEVA- Laboratory Biosafety Manual – 3rd Edition, Biosafety Level 1 – 4 http://www.who.int/entity/csr/resources/publications/biosafety/Biosafety7.pdf
ii. Biosafety in Microbiological and Biomedical Laboratories –5th Edition Biosafety Level 1-4 www.cdc.gov/biosafety/publications/bmbl5/bmbl.pdf
29.0 Validation: The validation procedure for prefabricated BSL II Containment shall include following tests-
i. Negative air-pressure in different sections of the laboratory is to be measured. There should be provision of alternative equipment other than the ones fitted in the control panel or the computer for measurement. Measurements are also to be taken both in power-trip power back-up mode
ii. Air-locks should be tested
iii. Complete decontamination/ sterilization of waste following autoclave and sterilization of infectious waste (both solid and liquid) should be tested
iv. Laminar flow cabinets should be validated
v. Light intensity (Lux level 200-300) even under power back up should be tested
vi. Sound/noise level should be tested
vii. Room temperature should be checked (with calibrated devices)
viii. Leakage in ducts, plenums and doors should be checked
ix. Bio-safety doors should be validated
x. Selected Bidder will ensure third party validation from accredited source on various test listed in section 29 (1-ix) after installation of BSL-2 containment .
30. Technical Capabilities
i. The firm shall have experience in setting up minimum 3 BSL-2/ 3 Lab facilities in India
ii. The firm should have proven track record of after sales service of BSL-2/3 Lab (operation and maintenance) in last 3- 5 years in India
iii. The BSL 2/3 lab should be designed through engineers having experience in planning and designing of such BSL 2/3 containment laboratories and should attach documentary proof in support
iv. The bidder must attach Catalogues / Technical data sheets to confirm the technical specifications quoted in the tender
31. Training of personnel: The bidder shall provide Training on Operation and Maintenance to the personnel at site. The operation manual printed in English should be provided at their cost