



**ARUNACHAL PRADESH
STATE COUNCIL FOR SCIENCE & TECHNOLOGY
(DEPARTMENT OF SCIENCE & TECHNOLOGY)
GOVERNMENT OF ARUNACHAL PRADESH
ESS-SECTOR, ITANAGAR-791113**

NOTICE INVITING TENDER(NIT)

“Sealed NITs are invited from the reputed manufacturers/authorized dealers/suppliers for supply and installation of the laboratory equipment / instruments/ machines etc. on Turnkey Basis”

By



**DBT-APSCS&T Centre of
Excellence for Bio-resources and Sustainable Development
Department of Science & Technology
Government of Arunachal Pradesh
Kamasaki, Kimin -791121
Arunachal Pradesh**



**DBT-APSCS&T CENTER OF EXCELLENCE FOR
BIORESOURCES AND SUSTAINABLE DEVELOPMENT
(DEPARTMENT OF SCIENCE AND TECHNOLOGY)
GOVERNMENT OF ARUNACHAL PRADESH
KIMIN-791121, DISTRICT PAPUMPARE
ARUNACHAL PRADESH**



No.SC(DBT)/ELMPE/92/2020-21/463

Dated 3rd March, 2021

NOTICE INVITING TENDER

Sealed tenders are invited from the reputed manufacturers / companies / authorized dealers for supply and installation of the laboratory equipment/instruments at DBT-APSCS&T Centre, Kimin as given at www.ardst.arunachal.gov.in. The tenders will be received by the Project Director, DBT-APSCS&T Centre, Kimin on or before **19.03.2021** up to **2.00 PM**, along with the tender fees of Rs.3000/- (Rupees Three Thousand only) in the form of Demand Draft drawn in favour of "Project Director, Centre for Bioresources and Sustainable Development" payable at Itanagar, along with 2% earnest money in the form of DD on quoted value, separately for each of the items quoted.

Sd/-

Director Cum Member Secretary
A. P. State Council for Science and Technology
(Department of Science & Technology)
Government of Arunachal Pradesh
ESS- Sector, Itanagar-791113
Arunachal Pradesh

Memo No.SC(DBT)/ELMPE/92/2020-21/463

Dated 4th March, 2021

Copy to:

1. The PA to Chairman, Arunachal Pradesh State Council for Science and Technology, ESS- Sector, Itanagar for information please.
2. The PA to Director Cum Member Secretary, Arunachal Pradesh State Council for Science and Technology, ESS- Sector, Itanagar for information please.
3. Notice Board, APSCS&T, Itanagar-791113.
4. Notice Board, DBT-APSCS&T Centre, Kimin, Arunachal Pradesh -791121.
5. Office Copy.

Project Director
DBT-APSCS&T Center of Excellence
for Bioresources and Sustainable Development
Kimin-791121, District Papumpare
Arunachal Pradesh

TERMS AND CONDITIONS

1. The tender fees of Rs.3000/- (Rupees Three Thousand only) in favour of “Project Director, Centre of Bioresources and Sustainable Development” payable at Itanagar which is non-refundable. Those submitting the NIT by down loading the tender documents must have to submit the NIT fee in the form of DD along with the NIT, **without which the tender documents will not be accepted.**
2. The bidder shall enclose EMD @ 2% of the quoted price in the form of DD drawn in favour of “Project Director, Centre of Bio Resources and Sustainable Development” payable at Itanagar. The bids that are not accompanied by the aforesaid bid security will not be accepted. The details of bid security must be provided. The bid security of the unsuccessful bidders will be released on request letter after issuing supply order to the successful bidder and the bid security of the successful bidder will be released after execution of the order along with the warranty period mentioned as in the bid documents.
3. The NIT shall be sealed and super scribed at the top of sealed cover “Tender for Lab equipment’s under the project of DBT-APSCS&T Centre”.
4. Tender has to be submitted offline only in two bidding systems i.e. (A) Technical bid and (B) Financial bid separately in their own/prescribed proforma. Both the sealed bids separately which are to be put together in a bigger envelope and also to be sealed. All the copy of the documents in support of eligibility criteria etc. are also to be enclosed along with the tender documents. The list of documents to be submitted along with technical bid and financial bid are detailed in clause No.5 of Tender Document.
5. The Bids will be opened on a prescribed date and time as mentioned at Sl.18 of this document. Interested Bidders can be present while opening the Bids. After Technical evaluations, the financial bids of those bidders whose technical bids are found to be suitable only will be opened and commercially evaluated. Technical& Financial Bid should be submitted separately for each item and super scribed at the top of sealed cover “Sl No: (As per NIT) and Name of the Items”.

The submitted bid document shall comprise the following components: -

A. Technical Bid: PART-A

Technical Bid should contain the complete specifications and technical details required for evaluation of the tender and the Equipment offered. Following details should be invariably form as part of the technical bid:-

- I. Bidder’s Detail duly filled (as per Annexure-I).
- II. Tender fees: Rs.3000/- (Rupees Three Thousand only)

- III. EMD @ 2% of the quoted Price (Annexure-II)
- IV. Documentary evidence established in accordance that the bidder is eligible to bid and is qualified to perform the contract if their bid is accepted. The following documents are to be enclosed with.
 - a) Self-attested copy of Certificate of Incorporation from Registrar of Companies.
 - b) Certificate from CA stating the Annual Turnover for last three Financial Years (i.e. FY 2017-18, FY 2018-19, FY 2019-20).
 - c) Self-attested copy of PAN/GIR card of the Company.
 - d) Self-attested copy of the Service tax registration of the Company.
 - e) Self-attested copy of experience certificates, work orders etc. Establishing at least three years' experience.
- V. Authority letter in case the bidder is not the manufacturer.
- VI. Details of service that will be needed for installation and further running of the system as well as after sales service offered should be clearly mentioned in the tender.
- VII. The Bidder has to state in detail the Electrical Power requirements, floor space, other structural details, foundation needed etc. with supporting drawings.
- VIII. The power supply available at the site is in single phase 220 ± 10 volts 50 Hertz and three phases 415 ± 10 volts, 50 Hertz alternating current supply system and all the Equipment's supplied should be made to operate in the above power supply system. The equipment's must have in build voltage protection circuit/device. If the instruments need extra voltage protecting device/ stabilizer, should be included in the system. If the instrument having fuse, 5 nos. of rated fuse need to be provided with each equipment's.
- IX. If required the Bidder may like to visit the proposed sites at Arunachal Pradesh where the installations are to be carried out, before submitting their tender.
- X. The details like address, telephone number and name of the contact person of reputed Organization in India and Arunachal Pradesh in particular where the Bidder/Manufacturer has supplied the similar equipment if any be attached along with the satisfactory performance report of the Equipment's from the user Organization along with Technical Bid.

- XI. It is the duty of the supplier to ascertain that the system supplied by them has to fit to the existing area and function effectively and efficiently as per the specification.
- XII. All the technical details should be accompanied with the Technical id.
- XIII. To facilitate format evaluation, the bidder shall quote items along with relevant papers for supporting such as catalogue, dealership certificate, printed price list, user list etc. failing which the bid shall be treated as non-responsive at the discretion of the purchaser.
- XIV. To facilitate prompt evaluation, the bidder shall provide Technical Compliance Report (TCR) as per ANNEXURE –III. NIT must also be submitted in a soft copy in CD/PENDRIVE (to support in Microsoft words only) in the ANNEXURE –III format failing which the bid treated as non-responsive, at the discretions of the purchaser. In case of any optional items, pictures should be shown separately. Any discrepancies in the soft copy will be the responsibility of the questioners.
- XV. **Detailed specification with make, model, size, and code no., catalogue, and name of manufacturer should be furnished. ISO certificate must be furnished for the offer make where applicable.**
- XVI. **Warranty Declaration**

All the above documents are to be accompanied with tender documents.

At any point of time original documents may be asked for verification. In case originals are not produced before due date bids may be rejected.

B. Financial Bid :-PART-B

Financial Bid must consist of following information:

- i. The cost of the items should be mentioned clearly in the Commercial Bid only. The supplier has to supply the required essential spares/ Accessories for trouble free running of the system for a period of three years apart from warranty period free of cost along with the consignment (Refer Annexure-IV).

- ii. The equipment should have a life span of more than ten years. Hence Commercial offer should also contain rates for Comprehensive Annual Maintenance Contract (including all necessary spare parts, consumables and labour) and Non-Comprehensive Annual Maintenance Contract (Labour charges only) for a period of three years from the date of commissioning of items at site. Free service after warranty period is preferred and has to be mentioned.
- iii. AMC rates and prices of spare parts will also be taken into account for commercial evaluation of the tender. Any breakdown call during the currency of the contract has to be attended by the supplier.
- iv. The supplier has to carry out the required maintenance works during the AMC period (post warranty period) as per the contract and if the supplier does not execute the work, DBT-APSCS&T Centre authority reserves the right to inform to Government to black list the bidder.
- v. Discount/Special Offer if any should be reflected in Commercial Bid.
- vi. If the supplier /manufacturer have supplied identical or similar equipment to other organizations the details of such installations for the preceding three years should be given together with the prices eventually or finally paid in the Commercial Bid.
- vii. The offer should contain the Basic Price and Percentage of Excise Duty, GST and other applicable levies should be shown separately. The rates should be inclusive of all charges including installation testing/commissioning and for reaching the equipment up to sites.
- viii. Rates should be quoted clearly both in words and figures separately for each item without which the NIT shall stand rejected.
- ix. Installation and commissioning charges, if any, inclusive of expenses of foundation work etc. are to be mentioned separately against each machine. In case of no mention, the same will be considered as inclusive of installation cost whenever applicable.

- x. Copies of S.S.I registration or such documents may be produced with NIT.
 - xi. Attested copies of dealership certificate and Co's printed price list must be enclosed with the NIT
6. The bid submitted to the bidder shall remain valid for a period of 90(ninety) days. Bid not conforming to this provision shall be treated as non-responsive.
7. There should not be any overwriting. Corrections, if any, should be made with dated initial of bidder. Bidder shall submit NIT separately in each item.
8. The price quoted shall be fixed and not subject to adjustment/variation during the performance of the contract.
9. The warranty of the items shall be as per the prevailing warranty policy/certificate of manufacturer (where necessary) for the items and warranty period shall not be less than **12 (Twelve) months from the date of commissioning of items at site (Annexure-V).**
10. The bidder shall furnish the warranty for all the items at the time of delivery and commissioning. The purchaser shall reject the items not enclosed by warranty certificate from their manufacturer. The warranty certificate should be duly signed and sealed.
11. Bidders must supply the items at their own cost. **All machineries/equipment's are to besupplied FOR destination.** Delivery of goods shall have to be completed within 30 (thirty)days from the date of issuing supply order.
12. The machineries are to be supplied ready to operate, complete with motor, starter and any necessary gadgets including catalogues, troubleshooting manual etc. without which the same will be considered as incomplete supply.
13. List of spare parts with current price to be required during operation of the machines and addresses of the source of spare parts availability including contact no., e-mail etc. are to be provided in a separate sheet.
14. Price of one set of critical wearable spares that would hamper the working of the machineries/equipment should be mentioned separately against each machine.
15. The supplier shall provide free maintenance services during the period of warranty. Any repair and maintenance including providing of spare parts (covered by manufacturer's warranty certificate) during the warranty period shall be bidder's responsibility. Failing to fulfil the warranty terms will lead to black listing of the bidder and non-refunding of the deposited EMD.
16. **All payment shall be made preferably in Indian Rupees only.**

17. Where ever the laws and regulations require, deduction of taxes at source of payment, the purchaser shall affect such deduction from the payment due the supplier, the remittance of amounts so deducted and insurance certificate for such deduction shall be made by the purchaser as per the laws and regulation in force.
18. The NIT **will be opened on the day of last date of submission i.e. on 19.03.2021at 3.00 PM** in the office of the undersigned. The bidder or his authorized representative may attend the bid opening.
19. Every page of the bidding documents is to be signed by the bidder including their acceptance of terms and conditions and have to returned with NIT.
20. The undersigned reserves the right to accept or reject any NIT and to cancel the instant bidding process and reject all NIT at any time prior to award of contract, without citing any reasons or incurring any obligations to the bidders on the purchaser's action.
21. All the accessories required for full and proper functioning of the equipment should be included with the unit price not as accessories such as Voltage stabilizer, Computer, Software, UPS etc.
22. All the equipment's are to be kept in ambient temperature, if the equipment requires any specific environment that should be mention in the technical specification part.
23. The undersigned reserves the right to change the quantity or drop any item during ordering process on the basis of requirement, quality of instruments quoted, availability of fund etc.

BIDDER'S DETAIL

1. Name of Tendering Company : _____
2. Name of Authorised Signatory : _____
3. Full Address of Reg. Office : _____

Telephone No.: _____ E-Mail Address: _____

4. Full address of Operating Branch Office (if any): _____

Telephone No.: _____ E-Mail Address: _____

5. PAN /GIRNo. : _____

6. E.S.I. Registration No.: _____

7. Turnover of the Company for the financial year:-

a) 2017-18:Rs. _____ Lakhs.

b) 2018-19:Rs. _____ Lakhs.

c) 2019-20: Rs. _____ Lakhs.

8. Whether valid labour license is available :Yes/No

9. Document authorizing the signatory to sign the tender on behalf of the company should be attached with this.

**SIGNATURE OF THE
BIDDER WITH SEAL**

ANNEXURE –II

**Format for EMD Details
(Separate NIT for individual items to be submitted)**

Sl.No	Sl. No of the item (as per bid document)	Name of the item quoted	Details of EMD Submitted including amount and validity

ANNEXURE –III

**Format for Technical Compliance Report & Price Data
(Separate NIT for individual items to be submitted)**

1. Sl. No of the item (as per bid document)
2. Name of the item:
3. Name of scheme:

Sl.No	Specification asked for (strictly as mentioned in bid document)	Specification offered (Corresponding to specification in bid document)	Technical compliance (Yes / No)	Variation if any	Technical literature supporting the Technical compliance (Suitably tagged)

ANNEXURE –IV

**FORMAT FOR FINANCIAL BID
(Separate NIT for individual items to be submitted)**

Sl No.	Name of the item (s)	Brief Specification	Unit price	% of GST / Freight charge if any (FOR Kimin)	Total amount

DECLARATION

We agree to supply the above items in accordance with the technical specification mentioned. We also confirm that normal commercial warranty / guarantee of months shall apply to the offered goods.

Bidder's Name:

Signature

Date:

Seal

Technical Specifications:

Sl No	Name of the Instrument	Specification	Qty
1	2-D Gel Electrophoresis System	<p>First Dimension Specifications with Software:</p> <ul style="list-style-type: none"> • System should include Individual Lane Control for running different samples, pH Gradients and focusing protocols in a single run. • System should have touch screen User Interface for easy easily creating and editing protocols and setting up the program rapidly. • System should include dedicated site for online data interpretation for Graphing data, comparing lanes and generating reports. • System should include USB Port to export data for storage and analysis • System should include run mode flexibility- to run IPG strips gel Side Up, Gel Side Down and with cup loading configuration. • System should have voltage 0–10,000 V, 1 V increments(50-10000V) • Current range should be 0–100 μA per lane, 1 μA intervals • Power range of 0–1 W per lane. • System should have peltier based cooling platform. • Temperature range should be 10–25°C \pm1.0°C @ max ambient 23°C 18–25°C \pm1.0°C @ max ambient 31°C. • Focusing trays should be made of polycarbonate for contaminant free process. • System should accommodate IPG strip length 7, 11, 13, 17, 18, and 24 cm. • System should have display QVGA resolution (320 x 240) touch screen or mouse control • System should have ramping Step, linear, gradual, and hold voltage ramping for each focusing step. Hold mode as a final step to prevent diffusion when IEF is complete • System should have 2GB capacity for storing protocols • Data collection should be in .dat format • Should be supplied with suitable PC <p>System should have following regulatory compliances:</p> <ul style="list-style-type: none"> • Safety EN 61010-1:2001, IEC 61010-1:2001 Use NRTL to test for compliance to UL61010-1:2004 and CAN/CSA C22.2 No. 61010-1-04 	1

		<ul style="list-style-type: none"> • EMC EN61326 (1997 w/A1:98) Class A FCC Code of Federal Regulations, Title 47, Part 15, Subpart B, Class A • Other approvals RoHS/WEEE Research Materials to determine level of EFUP <p>Image analysis 2D Software</p> <ul style="list-style-type: none"> • Gaussian modeling-based software • Sophisticated algorithms for Automatic Spot Detection & Quantification. • Spot detection summary matching summary, replicate group consensus tool to optimize spot detection and matching parameter • Sypro ruby filter for auto recognition and removal of background speckles • Simultaneous analysis of up to 15 gels • Upgradeable for DIGE analysis • Statistical analysis wilcoxon paired sample algorithm for providing accurate statistical comparison. • User adjustable significance level • Boolean analysis by using different set and subset • Gel land marking and automatic spot matching • Sophisticated variable background removal to quantitate low abundance protein • Can Export XML data and JPEG file format • Should be GLP/GMP Compliant, and should have facility for 21CFR Part 11 compliance in future. <p>Vertical Maxi Electrophoresis System</p> <ul style="list-style-type: none"> • System with 16cm glass plates, 1.5mm spacers (4), 15 well, Comb (2). Cell Includes central cooling core with gaskets, lower buffer chamber, Lid with cables, 2 sheets of glass plates, 4 sandwich clamps, upper buffer dam, casting stand with gaskets, leveling bubble <p>Power Supply:</p> <ul style="list-style-type: none"> • Programmable power supply should be capable to operate four electrophoresis units simultaneously for four identical runs with graphic LED display. • The output range should be 10-300 V, 0.4-400 mA, 1-75 W. • Constant voltage, current or Power with Automatic crossover • Memory storage: 9 programs , 9 steps, Timer Control : 99 hr, 59 min 	
--	--	--	--

		<ul style="list-style-type: none"> • Automatic Power up after Power failure, Safety features: No-load detection; sudden load change detection. 	
2	Anaerobic Jar	<ul style="list-style-type: none"> • Polycarbonate transparent jar, lid fitted with pressure gauge safety valve and 'O' ring gasket (includes catalase and stainless steel ten petri dish rack) ideal for critical tests requiring visual process monitoring OR Stainless steel deep drawn for the most stringent test , Anaerobic conditions can also be achieved using Hydrogen gas • Capacity : 2.5-3 L • Accessories : • Gas Pack (1 year expiry) Pack of 10 • Catalyst for Anaerobic Jar Pack of 5 • Test Strip for anaerobic condition Pack of 5 • Test Tube Rack for 20mm tubes x 8 hols. 	1
3	Autoclave 16L	<ul style="list-style-type: none"> • The Top Loading Portable Autoclave should have working chamber capacity of minimum 16 ltrs • Working chamber size should be Ø30 x 23 cm approx. • Working chamber should have seamless die pressed body. • The total sterilisation process should not take more than 42 – 45 minutes. • The portable autoclave cycle should not consume electricity more than 1 Units/ Per Cycle. • All wetted parts like chamber, Lid should be of SS304. • All internal joints should be argon welded. • The lid closing should be simple press & turn system. • The lid of the autoclave should be fitted with Pressure Gauge, Manual Exhaust Valve, Vacuum Breaker Cum Purge Valve, 2 nos Safety Valves. • The portable autoclave should have energy efficient tubular heater. • The portable autoclave should be supplied with stainless steel dressing drum of size Ø27 X 22 cm approx. and heater cover stand. • Complete cycle should be automatic. • Portable Autoclave should have inbuilt microprocessor-based controller with temperature & time fixed at 121°C for 20 minutes. • The Portable autoclave controller should have following facilities 	4

		<ul style="list-style-type: none"> • 7 Segment LED display & should display process & set temperature simultaneously. • Resolution:1°C • Temperature Set Point fixed at 121°C • Timer Fixed at 20 min • End of Cycle alarm with automatic heater cut off. • Open sensor alarm. • The portable autoclave should have inbuilt fuse for electrical safety • Supply Voltage: 230 V AC, 50 HZ, Single phase. • Calibration reports with NABL traceability. • Manufacturer shall be ISO 13485 certified & should submit photocopy for the same. • Local Service Setup for prompt and efficient post-sales support. 	
4	Autoclave Horizontal	<ul style="list-style-type: none"> • Construction: Horizontal double walled design, made of S.S all joints Argon welded. Joint less silicon Gasket. Heavy duty industrial flange heater. Pressure gauge 0-30 PSI, safety spring loaded Pressure valve, steam Release valve. • Resolution:1°C • Basket: S. S. Rod Basket • Safety: Safety high pressure release valve • Vacuum Breaker: Vacuum breaker & self-purging system • Supply: 230V AC, Single Phase, 50Hz • Inside S.S. 304 mirror finish. Outer SS 304 mirror finish. • Temp. Range: 121⁰C to 125⁰C factory set at 121⁰C • Pressure Range: 15 to 22 PSI, factory set at 15 PSI • Capacity:70-80 Liters 	1
5	Autoclave Vertical 75L	<ul style="list-style-type: none"> • The Vertical Autoclave should have Chamber Capacity of 75 to 80 ltr. • The Vertical Autoclave should work on the domestic power supply of: 230 V AC, 50 HZ, Single phase • The units external & internal chamber, lid and all wetted parts should be fabricated from stainless steel of 304 grade. • The Vertical Autoclave's all joints should be smooth finished for crevice free internals. • The lid should be provided with auto purge cum vacuum breaker valve and a manually operable valve for exhaust. 	2

		<ul style="list-style-type: none"> • The Vertical Autoclave should have stainless steel pressure gauge with dual range dial display in KPA and PSI along with a co-related temperature scale for steam in degrees Celsius. • The operations of the unit should be controlled by a microprocessor based PID controller. • Temperature Should be pre-set at 121°C & Non alterable with 1°C resolution. • Sterilization hold time should be pre-set at 20 mins & non alterable. • Dual seven segment LED display. • The unit should be equipped with Low Water Detection unit and should give Audio- Visual alarm in case of Low Water in the chamber and cut off the supply to the heater. • The unit should have safety valve to protect the equipment in case of over pressurisation. • The unit should give indication by audio-visual alarm on completion of pre-set autoclave cycle. • Industrial grade energy efficient ring type heater. • Manufacturer shall be ISO 13485 certified & should submit photocopy for the same. • Local Service Setup for prompt and efficient post-sales support. • Calibration reports with NABL traceability. 	
6	BOD Incubator 350L	<ul style="list-style-type: none"> • Outer chamber should be made up of cold rolled mild steel with anti-corrosion powder coating. • Inner chamber should be made up of polished stainless steel 304 Grade. • The inner chamber should comprise a design with fan, to distribute the air uniformly through stainless steel baffles running from the top to the bottom of the inner chamber. • Inner chamber should have perforated shelves railed on shelf holder which has to be mounted on five individual 3nos of holder supports to ensure undisturbed air circulation. • The space between inner and outer chamber should be insulated by means of Glass wool minimum 45 mm thickness which enable to maintain desired temperature inside the chamber irrespective of atmospheric condition. • The unit should feature RCCB (Residual current circuit 	4

		<p>breaker) for user's safety.</p> <ul style="list-style-type: none"> • The chamber should have viewing glass window with fluorescent light for easy visibility. • Temperature range should be 5°C to 60°C • The inner chamber capacity to be of 350L • Company should be ISO 9001:2015 certified <p>Unit should comply universal standard safety measures of CE certified.</p>	
7	Chromatography Columns.	<ul style="list-style-type: none"> • Glass Chromatography Columns with stop cock • Size: Length: 200mm bore-10mm- 2 piece, Length:300mm-bore-18mm- 2 piece, Length: 500mm bore-10mm- 2 piece, Length: 500mm bore-18mm- 2 piece, Length: 600mm bore-30mm- 2 piece, Length: 1000mm bore-40mm- 2 piece, • Supplied with suitable stands and clamps for each size. 	1 set
8	CO2 Incubator	<ul style="list-style-type: none"> • Should have at least 170 L of internal capacity. • Temperature management of at least 4°C above ambient to 50°C with control increment of 0.1°C • CO₂ gas range should be at least 0.1 – 20% with control increment of 0.1%, accuracy should be ± 0.3% at the specified Relative Humidity (RH) at 37°C and ambient 22°C, stability of ± 0.1% at 37 °C and ambient 22° and gas uniformity of ± 0.1% at 37 °C and ambient 22°C across the chamber. • CO₂ recovery rate of at least of 6 min after door opening and closing event to attain 5% CO₂. • Should have optional High-Temperature Disinfection [HTD] of at least 140 °C for 2 hours. Entire HTD cycle [including the time for warming up and cooling down to incubation temperature (37°C)] should not take more than 14 hours. • The system should have building management system relays built in and option to incorporate onto Data monitoring and documentations modules. • The door hinges, associated cable and other accessories should be robust and stringently tested. • Should have a large backlit display for control of temperature and alarms • Should have separate single inner glass door for monitoring of samples without disturbing conditions of the chamber. 	2

		<ul style="list-style-type: none"> • Should come with an inline pressure regulator to ensure less gas consumption and prevent overshooting of pressure which shortens life span of incubator. • The Inner chamber should be formed from single stainless-steel sheet with deep-drawn and seamless design with no corners, welds or joints for higher capacity and ease of cleaning. • Should have six-sided direct heating elements to ensure even distribution of heat throughout the entire incubator chamber. • Should come with a removable humidity tray for easy cleaning and refilling of distilled water. • Should be “fan less” design to reduce chance of contamination, reduce noise level, minimum air turbulence and bigger usable capacity. • Should have state of the art Dual Channel Infra-Red (IR); NDIR type CO₂ sensor with auto-calibration feature to ensure accuracy of sensor automatically and should withstand at least 180 °C during high temperature disinfection. • The CO₂ IR sensor should have a long-life. • The incubator should come with standard 3 perforated stainless-steel shelves; thickness of each shelf is 1.5 mm with flatness tolerance of individual shelves of 1 mm or lesser. Optionally up to 8 shelves can be accommodated. • The footprint should not exceed 5500 cm² for saving bench space. • The system should have option to stack two incubators with stacking kit. • Should have 02 Nos. Access ports at the back of the chamber to allow for external probes, etc., for third party monitoring of chamber conditions. • Should have incubator software command which allows tracking key operational information such as time, temperature, CO₂ concentration and humidity. • Should conform to CE certification standards. • Should be supplied with 2 nos. CO₂ Cylinder with approx. 30 kg and one double stage regulator. 	
9	Cyclomixer	<ul style="list-style-type: none"> • Speed [rpm] : 2500 or more • Operating mode : continuous operation • Touch function : yes • Speed control : scale 0 – 6 	1

		<ul style="list-style-type: none"> • Type of movement : orbital • Various applications with interchangeable attachments and inserts (e.g. Eppendorf tubes, microtiter plates, Erlenmeyer flasks 250 ml etc.), these need to be supplied with the system. 	
10	Deep Freezers (-80deg C)	<ul style="list-style-type: none"> • Freezer should be of 400 Liters capacity or more • System should have Programmable operating temperature from -50°C up to -86°C with 1°C increment • It should be an energy efficient system with power consumption. • System must be fully functional in operating temperature range (ambient Temperature) from 10°C up to 32°C • System should have a pull-down time from ambient temperature ($22^{\circ}\text{C} \pm 1$) to $-85^{\circ}\text{C} \leq$ (less than or equal to) 6 hrs. • Fully programmable microprocessor controlled with membrane keypad and eye level control panel. • Construction should be of Polyurethane foam insulation. • Inner door and outer doors should have effective sealing to prevent temperature loss with flat soft sealing on outer door which is easy to clean, durable and prevent ice formation. • System should have Warm up time of 30 hrs or longer from -85°C to 0°C (freezer 2/3 full) to indicate superiority of the Insulation system • System exterior should be made of Steel, powder coated paint to resist scratch and rust; the interior should be Polished Stainless-Steel grade 304 2B for easy cleaning and to eliminates potential for oxidation. • Heated air vent with ice-cleaning plunger prevents vacuum formation, allowing the door to be quickly & effortlessly opened anytime in the day • Freezer should have 5 Compartment with five inner doors with adjustable shelves. • Freezer must have capacity to hold 15 racks and 240 boxes of 2" / 5 cms height vials (Total sample (2" / 5 cms vials) capacity of 24,000 or more) • Freezers should have heated air vent and air filter. • Should have security keyed locks on the outer doors and lids keep out unauthorized users 	1

		<ul style="list-style-type: none"> Freezer must have battery back-up and security lock for unauthorized tampering. Freezer should have on board Systems Monitoring and Reporting Technology (S.M.A.R.T. Plus™) self-diagnostic software to diagnose faults in its electronic systems, its probes and/or its refrigeration system. Audible and visible alarms for temperature, power failure, system failure, battery low etc. Freezer must use CFC-FREE, HCFC-FREE nonflammable refrigerants, and refrigeration system must be energy efficient and hermetically sealed two stage cascade refrigeration system. Freezer must have ISO 9001 standard quality test requirements CO2 backup system with 2 nos of Co2 cylinder should be provided with stand. System should be quoted with 10 nos of racks and 100 nos of boxes. 	
11	Dry Bath cum Mixer	<ul style="list-style-type: none"> Digital Dry bath cum Mixer should have 3 in 1 option like mixing, heating and cooling for all tubes and plate format of 5 µl to 50 ml and have maximum speed of 3000 rpm. System should have a temperature control range from 15°C below RT to 100°C System should be able to set from 15 sec to 99:30 h or continuous mode System should have thermo top to avoid condensate formation and sample evaporation Condensation-free sample handling. System should be supplied with 1.5 ml X 24 thermo lid with extender. 	2
12	Electronic Balance	<ul style="list-style-type: none"> Maximum Capacity : 220gm. Readability: 0.1 mg. Repeatability: ± 0.1 mg. . Linearity : ± 0.2 mg. Tare Range: Full of Capacity. Calibration: Built in Calibration.(Internal Calibration system). Multiple weighing unit: gams, weight in ct, mg, ozetc or a custom conversion. Application support: Tare, Net Total ,Counting function. Stabilisation Time*1 : Approx. 3.0 seconds 	2

		<ul style="list-style-type: none"> • Operating Temperature and Humidity Limits : 5-40°C 20-85%*2 • Temperature Coefficient for Sensitivity (10-30°C) :± 2 ppm/ °C. • Pan Size (mm) approx. : ø91 • Display : LCD • Supply AC Adaptor and Weighing chamber with the system. • Provided as per GLP/GMP/ISO calibration report with the instrument. • Dust Cover. 	
13	Electrophoresis Unit with Power Pack (Horizontal)	<p>A) Mini Horizontal Unit- 1 Unit</p> <ul style="list-style-type: none"> • Should come with 7 x 10cm tray and must also have an option to accommodate 7 X 7 cm tray. • Cell size: 9.2 X 22.5 X 5.6 cm • Should come with mini gel caster. • System must include Sub-Cell unit, UV transparent tray, casting gates etc. • Should come with two 1.5 mm thick fixed height combs (8 and 15 well) and must also have option for other combs of varied specifications. • UV transparent tray must have integrated fluorescent ruler. • Should be compatible with ready precast gels and the same must be available from the same principal. • Should have IEC1010 or equivalent electrical safety certification. <p>B) Midi Horizontal Unit- 1 Unit</p> <ul style="list-style-type: none"> • Should come with 15 X 10 cm tray • Cell size: 17.8X25.5X6.8 cm. • System must include Sub-Cell unit, UV transparent tray, casting gates etc • Should come with two 1.5 mm thick fixed height combs (15 and 20 well) • UV transparent tray must have integrated fluorescent ruler. • Should have IEC1010 or equivalent electrical safety certification <p>C) Maxi Horizontal Unit- 1 Unit</p> <ul style="list-style-type: none"> • Should come with 15 X 20 cm tray • Cell size (W x L x H): 18 x 40.5 x 9.4 cm • Max Sample Number: 120 • System must include UV transparent tray, gel caster etc 	1 set

		<ul style="list-style-type: none"> • Should come with two thick fixed height combs (15 and 20 well) • UV transparent tray must have integrated fluorescent ruler. • Should have IEC1010 or equivalent electrical safety certification <p>Power Supply:</p> <p>D) Power Pack HC High-Current Power Supply -1 Unit</p> <ul style="list-style-type: none"> • Output: 5-250 V, 0.01-3.0A, 1-300 W • 2- line, 16-character LCD for programming • Constant voltage, constant power, or constant current output • Timer: 1 min-99 hr, 59 min • Input power: 198-264 VAC, 50/60 Hz, <p>E) Power Pack Universal Power Supply- 1 Unit</p> <ul style="list-style-type: none"> • Output: 10-500 V, 0.01-2.5 A, 1-500 W • Constant voltage, constant power, or constant current output, or constant temperature • Timer: 1 min-99 hr, 59 min • Input power: 198-264 VAC, 50/60 Hz. 	
14	Electrophoresis Unit with Power Pack (Vertical)	<p>A) Mini Vertical Unit - 1 Unit</p> <ul style="list-style-type: none"> • The system should accommodate 2 hand cast or precast gels at a time and should have the provision to accommodate 4 gels at a time. • Gel Size: 8.5 x7.5 cm (W x L) • Dimension of Glass Plate: Approx. - 10x 8 cm • Max Buffer volume: Not more than 750 ml for 2 gels and 1000 ml for 4 gels • Run time should be less than 1 hour (at 200V constant) • Plates: At least 5 sets of glass plates should be provided with each unit, preferably glass plates with permanently bonded spacers • Combs: At least 5 ten well 1.0 mm thickness combs should be provided • Casting frames, sample loading guide, electrode assembly, tank, lid with power cables should come with the unit • Regulatory Certification – IEC 1010, CE • Same system should be able to perform western blotting, 2D/tube gel electrophoresis & electro elution with the help of different module <p>B) Midi Vertical Unit- 1 Unit</p>	1 set

- Compact size that requires only 1 L running buffer
- Built-in wedge on the lid to open gel cassettes in a single step
- Locator slots built into the tank walls to easily and quickly slide cassettes into position
- Number of gels: 1–2
- Precast gels: Criterion™ precast gels
- Handcast gels: Gels prepared in Criterion empty cassettes
- Gel size (W x L x thickness): 13.3 x 8.7 x 0.1 cm
- Total buffer volume: 1 L
- Typical running conditions: 200 V constant
- Recommended power supply: PowerPac™ Basic or PowerPac HC
- Dimensions (W x L x H): 14.4 x 22.3 x 19.5 cm
- Weight: 0.86 kg (1.9 lb)

C) Maxi Vertical Unit- 1 Unit

- Accommodates handcast gels
- Patented single-screw clamps on the casting stand that exert uniform pressure along the entire length of the glass plates provide a leak proof seal without agarose plugs or grease
- Central cooling core can be connected to tap water or a cooled recirculating bath, or filled with coolant, providing smile-free patterns with as little as 1.5 L buffer
- Large format vertical electrophoresis cell
- 16 x 16 cm gel size, 4 gel capacity,
- includes four 1.5 mm spacers,
- two 15-well combs,
- 2 sets of glass plates,
- 2 sets of sandwich clamps, casting stand
- upper buffer dam, alignment card with leveling bubble.

Power Supply:- 1 Unit

E) PowerPack HV High voltage Power Supply

- Output of 20-5000 V, 0.01-500 Ma, and 1-400 W
- Constant voltage, constant power, or constant current output, or constant temperature
- Timer: 1 min-99 hr, 59 min
- Input power: 198-264 VAC, 50/60 Hz,

F) PowerPack Universal Power Supply- 1 Unit

- All applications from mini vertical and high-throughput electrophoresis to blotting

		<ul style="list-style-type: none"> • Output: 10-500 V, 0.01-2.5 A, 1-500 W • Constant voltage, constant power, or constant current output, or constant temperature • Timer: 1 min-99 hr, 59 min • Input power: 198-264 VAC, 50/60 Hz, 	
15	Fermenter	<ul style="list-style-type: none"> • Capacity of : 10 Lit • The vessel is designed to comply with the requirements of pressure vessel and Bioprocess • Shell : Welded with dished bottom and provided With Jacket for steam / water circulation. • Top Plate : Attached to shell through bolts. • All parts in contact with the culture are made of SS316L • Jacket with Spiral: SS 304 • O rings / Gasket: Silicone / EPDM • Design Temperature: minimum 150°C • Pressure: minimum 3 Bar • The vessel is provided with ports at various locations for addition of Acid, Alkali, Antifoam & Inoculum and for Temperature, pH and DO. <p>The agitator assembly consists of the following:</p> <ul style="list-style-type: none"> • Shaft with 3 nos. Ruston Turbine Impellers • Single Mechanical Seal • Speed Range : 100 – 1000 • Motor Power : 0.5 HP <ul style="list-style-type: none"> • The air / steam / water connection with necessary accessories should be included. • Inlet Filter Unit: Insitu-Sterilisable 0.2 µ PTFE absolute filter element with full draining stainless steel housing with steam trap and steam connection suitable for 2 VVM Diaphragm Valves • Exhaust Filter Unit: Insitu-Sterilisable 0.2 µ PTFE absolute filter element with Full draining stainless steel housing with steam connection. • Electrically operated solenoid Valves for sterilization and fermentation temperature maintenance <p>VESSEL ACCESSORIES</p> <ul style="list-style-type: none"> • Baffles : 3 Nos. • Tubular ring air Sparger : 1 No. • Drain Valve : 1 No. 	1

		<ul style="list-style-type: none"> • Needle adaptor, needle, septum and blind plug : 3 Sets. • SKID : Vessel with agitator assembly along with pipe rack. • The standard system consists of PLC controller for Temperature and Speed with provision for pH and DO • The control panel houses the controllers, transmitters and other accessories, with provision for pH and DO controllers. <p>TEMPERATURE MEASUREMENT & CONTROL</p> <ul style="list-style-type: none"> • Digital display • Measurement accuracy + 0.1° C • Control accuracy + 0.2° C (upto 40° C) <p>SPEED MEASUREMENT AND CONTROL</p> <ul style="list-style-type: none"> • AC Drive • Digital display • Measurement accuracy + 2 rpm • Control accuracy + 5 rpm <p>FOAM CONTROL</p> <ul style="list-style-type: none"> • Antifoam Probe • Level Switch on/off • Antifoam Addition system consisting of a set of 1 no Bottle with Disposable Silicone tubing & Peristaltic Pump (fixed speed) <p>pH MEASUREMENT & CONTROL</p> <ul style="list-style-type: none"> • pH probe, Cable • pH transmitter; Range: 0-14 • pH controller • Acid / Alkali Addition system consisting of 2 sets of 250 ml Bottles with Disposable Disc Filters, 5 Meter Silicone tubing • 2 Nos. of Peristaltic pumps (fixed speed) <p>DO MEASUREMENT & CONTROL</p> <ul style="list-style-type: none"> • DO probe, Cable • DO transmitter; Range: 0-100% • Cascade control through agitation • 1 HP Oil free compressor and accessories need to provided • 6 KW electrical steam generator and accessories need to provided • 1 TR Chiller and accessories need to provided <p>COMPUTER SOFTWARE</p>	
--	--	---	--

		<p>A software and interface system to control the fermenter will be supplied. The software will be operated through windows and consists of the following facilities:</p> <ul style="list-style-type: none"> • Batch data • Initializing a batch • Data acquisition • Set point control • Manual data entry in batch information • Output in graphics or text mode • Compare data between (1) present and old runs (2) old and old runs (3) present / old runs between fermenters • Alarms • Recipe based algorithms • Data export to convenient windows-based program • These alarms will be triggered by defective sensor cables, agitator alarms, etc. 	
16	Fluorescent Microscope Inverted with accessories	<ul style="list-style-type: none"> • Inverted research microscope with 12V 60W power unit (preferably 37 watt or higher for halogen lamp illumination & should be equivalent to 5500K color temperature) stabilized for observation under transmitted light brightfield, phase contrast & DIC application for plastic vessel. It can also be switch over to long lasting LED lamp attachment for transmitted light application. • This microscope should also be suitable for relief contrast, modulation contrast as well as DIC facility. • Binocular tube 45°/23 with intermediate tube for camera attachment (100:0::0:100) for better compatibility for observation as well as documentation along with wide field focusable 10x/23 mm or higher field of view. • Large Specimen stage 232x230mm with object guide with co-axial drive X-Y movement. Universal mounting frame as optional to accommodate different samples like large tissue culture bottles, petri dishes and culture flasks. • Minimum 5/6 position objective nosepiece for accommodating 5/6 different objectives with objective magnification 1.25x to 100x for BF, PH & provision for DIC. • Infinity color corrected objectives 5x, 10x, LD-20x, LD 40x, LD 63x (oil) for bright field, phase contrast, fluorescence & Plas DIC application also with three 	1

		<p>years anti-fungal treatment certified from the manufacturers.</p> <ul style="list-style-type: none"> • Universal turret long distance condenser 0.55 of working distance 32 mm with 5-position modulator disk for bright field, phase contrast & DIC complete with neutral-density filters & interference green filter, blue filter for contrast enhancement for transmitted light application. • It should be four/six position reflector turret for LED modules for fluorescence application. • It should be complete with 4-position reflected light high-power long-lasting LED modules with full intensity for fluorescence application along with fluorescence filters for <ol style="list-style-type: none"> i) UV excitation filter 365 shift free for dyes, like DAPI, Hoechst 365 etc. ii) Excitation 470/40, Dichromatic Mirror 495, Emission Filter 525/50 for FITC GFP Auramine etc. iii) Excitation 560/40, Dichromatic Mirror 585, Emission filter 630/70nm. iv) for more filters as future upgradation. <p><u>Photography system:</u></p> <ul style="list-style-type: none"> • Dedicated microscopy colour camera 5.07 MP CMOS sensor, resolution: 2464x2056 or more, 38 fps incl. driver and USB 3.0, minimum 2546 (H) x 2052 (V) = 5.0 Mega pixel colour, Pixel size: 3.45 µm x 3.45 µm, CMOS sensor Chip size: 8.5 mm x 7.1 mm equivalent to 2/3" sensor with cooling system, digital binning, Exp. Time 100 ms to 4s, Live frame rates (depending on hardware and software configuration): 36 fps @ full frame 67 fps @ 1920 × 1080, 99 fps @ 1280 × 720, One stage Peltier cooling, CCD c-mount 0.63x adapter for attaching camera. • Complete with imaging software for multi-channel fluorescence, Interactive measurement of morphological parameters e.g., length, area, box, perimeter, gray values, angle and all other contour-based measurement data, text annotation, software module for time lapse module, multi-focussing module. 	
--	--	--	--

		<ul style="list-style-type: none"> • Suitable Desktop with graphics card, 14–15-inch screen to supplied along with the system to ran the CCD camera & software. • System should complete with two years warranty. 	
17	Freezer (-20°C)	<ul style="list-style-type: none"> • Digital controller with display • Super freeze function • Reversible door • High temperature alarm • Capacity: 340-400 lits • Temperature range: -16 to - 25 °C • Castors: Rear only • Lock: Yes • No. of shelves/ drawers /baskets: minimum 8 • Type of door / lid: Solid • Visual & Acoustic Alarm: Yes 	2
18	Fume hood	<ul style="list-style-type: none"> • Working Area 1200x600x600mm., • Type of the Fume Chamber.: Constant volume exhaust with vertical sliding sash. • Arrangement of Fume Chamber : One fume chamber connected with single blower. • Material of construction: 20 gauges 304gr. S.S. sheet or 20-gauge electro galvanized sheet. • Surface Treatment front side. : Clear Epoxy Powder coated paint. • Surface treatment top and back. Epoxy Powder coated paint. • Internal lighting.: Housing fixture of 2ft long quick starts tube light. • Front sash: Sash of 5mm thickness safety glass with aluminium section framing vertical sliding counter balanced & attached with S.S. 316 grade wire ropes. • Utility fitting and valves.: Tested & colour coded as per DIN standard. Utility piping will be terminated at the back of the fume chamber to be connected with service line. • Water supply : One. • Piping of raw water : 8mm dia flexible cotton braded PVC piping. • Gas connection: One with piping . • Electrical Fitting : Internal wiring is done of Anchor/Havel's • Motor starter is located on the front panel of the fume chamber. • 6/16 Amp socket : 2 Nos. 	1

		<ul style="list-style-type: none"> • Drip cup on working surface : One No. PP moulded wash basin with flexible PVC hose to be connected to drain line. • Work surface : 19mm thick (\pm 1mm) black jet granite. Wash basin cut out flushed with working surface will be provided. • Fume chamber mounting : Fume chamber will be mounted on stand with provision for storage cabinet. • Centrifugal fan casing impeller. : Fan of PP/FRP casing impeller of PP block & sheet with forward curved radial moulded blades. • Centrifugal fan : 1 HP • Duct : 250mm dia Flexible pipe heat resistant. 	
19	Gel Documentation System	<p>Applications</p> <ul style="list-style-type: none"> • Fluorescence: Yes • Chemiluminescence: No • Colorimetry : Yes • Gel documentation: Yes <p>Hardware Specifications</p> <ul style="list-style-type: none"> • Maximum image area: Length: 14 cm, Width: 21 cm • Touch screen functionality: Multi-touch capable • Display resolution: 1024 x 768 pixels, 9.7" (24.64 cm) display • Onboard computer system: minimum 2 GB RAM, 32 GB disk space, 4 USB ports • Sample thickness: Maximum supported thickness: 5 mm • Excitation source: Trans-UVB (standard), Epi-white (standard), Trans-white (optional), Trans-blue (optional) • Maximum image area: Length: 14 cm, Width: 21 cm • Excitation source; Trans-UVB (standard), Epi-white (standard), Trans-white (optional), Trans-blue (optional) • Detector: 6.3 MP CMOS • Pixel size: 2.4 μm x 2.4 μm • Emission filters: 535–645 nm (standard) • Dynamic range: >3.5 orders of magnitude • Pixel density (gray levels): 65,535 • Instrument size (L x W x H): Depth: 44.8 cm (18"), Width: 36.0 cm (14.2"), Height: 35.3 cm (14") • Instrument weight: ~16 kg (~35 lb) <p>Automation Capabilities</p>	1

		<ul style="list-style-type: none"> • Workflow automated selection: Application driven, tray-based imaging and auto selection of excitation source • Image flat fielding : Dynamic; pre-calibrated and optimized per application • Auto-exposure: 2 user-defined modes (rapid or optimal) <p>Specifications of the Image Analysis Software:</p> <ul style="list-style-type: none"> • Automated lane and band identification, molecular weight or base pairs evaluation, band sizing, and quantitation based on a reference band or quantity standards • Snapshot tool to copy images, lane profiles, and graphs • Allow Publishing resolution (dpi) and publishing dimension to be specified with a one-click image export for publication. Provides functionality to produce image at user-defined dpi and dimension • No requirement of license for registration. The full version software should be installable in large number of computers. Lifetime free upgrades of Software & Firmware should be available. • Mac and PC compatible software • 16-bit and 8-bit tiff images with a one-click export option • Software should produce customizable reports with data organized as desired, including, Lane and band identification, molecular weight or base pair evaluation. Band sizing and quantification are based on a reference band or quantity standards. • Software should offer live update of results with any change of analysis parameters. • Local/Global background subtraction for individual bands • Tools for compliance with U.S. FDA 21 CFR Part 11 regulations 	
20	Gradient PCR (96well)	<ul style="list-style-type: none"> • System with Universal Block for 96 x 0.2 ml PCR Tube, 71 x 0.5 ml PCR Tube, One 8 x 12 PCR Plate • System should be gradient PCR, capable of testing 12 different temperatures simultaneously across a gradient range of 1 - 20°C and should have Steady Slope Gradient Technology for identical gradient. • System should be of Heating and Cooling Technology. ensures precise control of temperature. • Temperature Control Range : from 4° C to 99° C with Lid Temperature range : 37° C to 110° C 	2

		<ul style="list-style-type: none"> • Temperature Control Mode : Fast, Standard and Safe • Block Temperature Accuracy : $\pm 0.2^{\circ} \text{C}$ • Temperature control speed approx. 3°C/s (heating) • Temperature control speed approx. 2°C/s (cooling) • Lid descent and closing pressure - Flexlid technology with Thermal Sample Protection • Intuitive Graphic programming with larger display • Auto Restart facility with user defined time interval when power fails and resumes • System memory of more than 100 User folders and more than 500 programs • Two USB ports : for protocol transfer, self-test, USB, printer/mouse 	
21	Green House with 63KVA DG Set (AMF Panel)	<ul style="list-style-type: none"> • Total Area: 100sq.m with 2 chamber. • Chamber Size: 50sq.m.x02 Chambers. <p>STRUCTURE:</p> <ul style="list-style-type: none"> • Frame: All galvanized steel is used for End wall and side wall framing Aluminium corner trims, aluminium ridge bar and Galvanized gutter trim Brackets & fasteners as required to assemble frame.(02 Complete Set) <p>DOUBLE DOOR ROOM:</p> <ul style="list-style-type: none"> • Size 2.1m x 3m x 2.43m (L x W x H) covered with 6mm thick polycarbonate sheet.- 01 No. • Door: Size: 1.9m x 0.91m long & wide, normally lockable made with clear 6mm polycarbonate glazing, top & bottom tracks, jambs, flashings & installation hardware - 3 nos. • Air Curtain: Size- 3' wide. M.S. Powder coated body for normal height. A heavy duty air curtain with double blowers 4'. Prevents loss of cooling/heating effects of air. 01 No. <p>CLADDING:</p> <ul style="list-style-type: none"> • Roof, front wall, end wall, & sidewalls of the Greenhouse - sets and double room for rigid covering with 6mm thick polycarbonate sheet, and accessories. (02 Complete Set), <p>SHADING SYSTEM:</p> <ul style="list-style-type: none"> • External Shading :75% agro shade net, with manually rolling arrangement inside the Greenhouse, Internal Shading: by aluminium thermal Screen with motorized rolling arrangement (02 Complete Set), <p>FOGGING SYSTEM:</p>	1

		<ul style="list-style-type: none"> • Fogging System, pump with screen filter, fogging nozzles, pipes, polymer water tank (02 Complete Set), <p>COOLING SYSTEM:</p> <ul style="list-style-type: none"> • Air conditioner units will be provided, which are responsible to maintain temperature range minimum 26⁰C to 30⁰C ± 1⁰C throughout the year (during day or night) in greenhouse (02 Complete Set), <p>LIGHT:</p> <ul style="list-style-type: none"> • Photosynthesis Active Radiation Horticulture Lamp:- 600 W are specific action lamp for photosynthesis. (appropriate units) <p>HEATING SYSTEM:</p> <ul style="list-style-type: none"> • Biotech Heat Convector Great, By electric heat convector system of 2.5 KW. Complete uniform heat circulation system has been given in this heat, so that the heat can be blown in the complete area. Special heat convector system for to maintain required temperature. (02 Complete Set), <p>CIVIL WORK:</p> <ul style="list-style-type: none"> • Foundation wall for all sides for Greenhouse along with the double door room. Wide based 1.5' below earth's surface, 1' above earth's surface, as kick-board 9" wide, frame base block height 2', • Plinth protection: 0.6m wide all around the greenhouse along with buffer room • Floor: Anti Slippery tiled. (02 Complete job in all respects). <p>CONTROL PANEL:</p> <ul style="list-style-type: none"> • For Automation Monitor Panel which includes, Light, Temperature & Humidity Control System., (02 Complete Set), <p>ELECTRICAL WIRING:</p> <ul style="list-style-type: none"> • All wires will be of copper, heat resistance and desired load (Make – Havells/Finolex) with A grade work. (02 Complete Set) <p>POWER BACKUP WITH AMF PANEL:</p> <ul style="list-style-type: none"> • 63KVA Genset with proper platform with proper foundation & enclosure/shading. • Electrical connection from existing transformer to greenhouse location. 	
22	Grinder	<ul style="list-style-type: none"> • Powerful 750-1000 W motor with pure copper winding designed to deliver a high torque for efficient high-performance grinding. • Uniquely designed blunt blade with thick edges, 	2

		<ul style="list-style-type: none"> • Easy hand free operation • 3 Jar with different blade attachments. 	
23	Harbarium Rack Almirah	<ul style="list-style-type: none"> • Cabinet with minimum with 12 drawers. • For keeping botanical specimens securely placed in herbarium sheets. Door Provided with lock & lined with velvet. • Drawer frame of MDF with MDF sheet bottom fitted with puller knob and index card holder. Phosphor bronze clip provided inside drawer for keeping herbarium sheets in position. • Drawers Finished in spirit polish. • Drawer Size minimum: 45cmx37cmx8cm 	15
24	Herbarium Pressure	<ul style="list-style-type: none"> • MDF Planks. • Nicely painted. • Provided with tilting type bolts & fly-nuts for putting sufficient pressure. • Size: 45x30cm 	10
25	Hot Air Oven 250L	<ul style="list-style-type: none"> • Capacity should be 250 Litres or better • Should have minimum 3 Stainless steel wire mesh trays shelves • Control Accuracy Should be $\pm 0.5^{\circ}\text{C}$ or better • Uniformity should be $\pm 2^{\circ}\text{C}$ at 100°C or better • Usable Inner Dimension Should be 600 X 600 mm • Should have PID Control with timer for controlled accuracy • Temperature range should be up from 50 to 250°C • Should have Auto cut off of heater and fan on door open • Must have glass in main door for easy viewing of loads/samples without opening the door. • Should be Forced convection type • Outer and Internal chamber should be made of SS 304 • Should have clear bottom in the inner chamber. • All corners must be rounded for easy cleaning • Should have Independent over Temperature Safety • Should have Electric overload safety. • Heaters should be industrial grade sheathed tubular and fitted in the back side of oven. • Should have silicon gasket in the door • Shelves should be adjustable in heights • The product has to be CE certified, and product CE certification has to be produced. • Must attach Calibration certificates with NABL Traceability. 	4

		<ul style="list-style-type: none"> • Manufacturer /Dealer should attach relevant documents of ISO/CE & Authorization certificates. 	
26	Hot Water Bath 28L	<ul style="list-style-type: none"> • It should have Tank capacity of aprox 28 ltr. • The complete construction should be Fully stainless steel, including bottom. • It should have Temperature Range: +5 °C to 90°C. • Panel for easy setting, access and check up of operating status • Water bath should have microprocessor based PID temperature controller with change facility to timer & temperature by user. • It should have Energy efficient • It should have Independent over-temperature self-resetting safety cut-off. • It should have Uniformity: $\pm 0.3^{\circ}\text{C}$. • It should have Resolution of : 0.1°C. • Water Bath should be CE certified • It should be supplied with lid. • Calibration reports with NABL traceability. • Manufacturer shall be ISO certified 	2
27	HPLC	<ul style="list-style-type: none"> • The HPLC must be capable of extensive self-diagnostics and can be operated by an external PC through chromatography software besides the following configuration and specifications. The standard accessories and spares will have to be supplied with the equipment. <p><u>Hardware Specifications:-</u></p> <ul style="list-style-type: none"> • The system: Modular system with system controller, solvent delivery pump, degasser, auto sampler, detectors and column oven should readily available. • Usable solvent types should include both organic and aqueous solutions. Specialized mixer should also be available when solvent contains TFA. Automated functions like time-controlled instrument auto-start up, auto purge and automatic validation should be available. • The system should also be able to auto-shutdown to reduce power consumption. <p><u>Quaternary Low Pressure Gradient Solvent Delivery Unit:-</u></p> <ul style="list-style-type: none"> • It should be a Quaternary Low-Pressure Gradient pump & Parallel Double Plunger. 	1

	<ul style="list-style-type: none"> • Flow rate : 0.001 to 10 ml/min or better • Flow rate accuracy : $\pm 1\%$ or $\pm 2 \mu\text{l}/\text{min}$ of set value whichever is larger • Flow rate precision : $\pm 0.06\%$ RSD or better • Maximum pressure setting range : not less than 5800psi and above • Gradient accuracy : $\pm 1\%$ • Gradient precision : 0.1% RSD max. • There should be dedicated button for purging in HPLC pump. <p><u>Degassing Unit:-</u></p> <ul style="list-style-type: none"> • Degassing unit should have 4 or 5 flow lines & membrane-type degassing. <p><u>Auto-Sample Injector:-</u></p> <ul style="list-style-type: none"> • Total sample injection design with variable injection volume is desired. • Sample injection volume : variable between 0.1 μl to 100 μl, • Injection volume setting 0.1 μl & Sample loss during injection is 0 • Carry over: 0.005 %, or better. • Injection volume accuracy: 1% max or better. • Injection volume precision: 0.3.0% or better • Number of repeated injection: 30. • Number of samples to be processed automatically, random access up to 170 or more for 1 ml vials, 70 or more for 1.5/2 ml vials, 50 or more for 4 ml vials, 180 or more for two 96-well MTP/DWP, 760 or more for two 384-well MTP/DWP. Also, ten 1.5/2 ml vials in addition to each of the above. • Operating pH range : pH1 to pH14 • Operating temperature range : 4 to 35°C or better. • Sample cooler facility must be there with built in dehumidifying function for temperature range of 4 °C to 40°C. <p><u>Column Oven:-</u></p> <ul style="list-style-type: none"> • The temperature setting range: 4°C to 80°C or better. • Temperature control precision: $\pm 0.1^\circ\text{C}$ or better. 	
--	---	--

	<ul style="list-style-type: none"> • The oven compartment: should be able to contain minimum 2 columns or more • The oven should have built-in Leak sensor, temperature fuse, temperature upper limit for safety operation <p><u>Column:-</u></p> <ul style="list-style-type: none"> • C18 Analytical column 250 x 4.6mm, 5µ- 1 number. <p><u>Photo-Diode Array UV-VIS Detector:-</u></p> <ul style="list-style-type: none"> • Light source – Deuterium and Tungsten lamp • Data rate should be 100 HZ or more • Wavelength range 190 – 800 nm • Number of Diodes- 1024 • Wavelength precision $<\pm 0.1$ nm • Noise $<\pm 0.6 \times 10^{-5}$ AU • 6. Drift $< 1 \times 10^{-4}$ AU/hr • Flow cell-Should be Temperature controlled. • Should have intelligent Peak Convolution algorithm and Dynamic Range extension functions. <p><u>Data Management System/software:-</u></p> <ul style="list-style-type: none"> • Suitable Chromatography Software must be provided with integrated SQL database. • Software must register all events (log files) audit trails for Data, Method, Batch, Report, System Policy and User Administration • Operation of the system should be very easy and intuitive via a state-of-the-art 32/64 bit Windows 7/10 based software • Chromatography software which comply with Good Laboratory Practice (GLP) and Regulatory Conformity. <p><u>Service, Warranty and Training:-</u></p> <ul style="list-style-type: none"> • The system: accompanied with Conformity Certificate. • Complete support for equipment for at least a period of 2 Years Warranty. • Vendor to provide both on-site and operator training for users on the system start-up, usage, maintenance, quality control, trouble shooting etc. <p><u>Warranty:-</u></p>	
--	---	--

		<ul style="list-style-type: none"> • 2 years Warranty must be included in the NIT. • 5-year AMC offer <p><u>Accessories: -</u></p> <ul style="list-style-type: none"> • Necessary branded computer with suitable latest configuration, LED monitor, CD/DVD drive and a branded laser printer. • 2 KVA Online UPS with minimum 30 minutes back up. • Sample and solvent filtration assembly • Sonicator 	
28	Ice Flake Machine	<ul style="list-style-type: none"> • Fully Automatic microprocessor control • Compact Design and low maintenance • Stainless Steel construction • Continuous Ice Flakes Output • CFC free compressor • Noiseless operation • Overload protection • Low water level detection • Wheels for easy mobility • Capacity of Ice flake per 24 hrs. : 30 kg minimum • Storage bin : ABS Plastic • Storage Capacity (kg) : 10 kg minimum • Cooling Method : Air • Water Supply : Tap water • Low Power consumption. 	1
29	Laminar Flow (Biosafety cabinet Class-II Type-A2) (4ft)	<ul style="list-style-type: none"> • The cabinet should be advanced microprocessor control, which supervises operation of all cabinet functions. Temperature-compensated air velocity sensor monitors both exhaust and down flow. 24-hour clock, UV timer, UV run hour meter, and blower run hour meter are standard. • The Biological safety cabinet should comply International Standard Certificates like NSF , JIS etc. • The cabinet should have energy efficient electronically controlled DC blower motor with night set back mode facility. • The cabinet should have long life DUALULPA/HEPA Filter for supply and exhaust (per IEST-RP-CC001.3) with 99.999% efficiency for particle size 0.1 to 0.3 microns. • Should be raised armrest for elevates the operators arms to prevent inflow grille blockage for safety work. 	4

		<ul style="list-style-type: none"> • Work tray should be made of single piece stainless steel type 304 , with 4B finish • Programmable automatic UV light timer should simplify operation and extending UV light life and saving energy. • The Cabinet outer surface should have antimicrobial coating for minimizing contamination. • The controller should include soft touch keypad controls with LCD display of air flow velocity. • The cabinet should have built-in warm, white, electronically ballasted zero flicker and instant start 5000K lightening provides excellent illumination of the work zone. • The construction of cabinet should be electro galvanized steel including stand also. • Internal Dimension around 1200 x 579 x 659mm(w x d x h) • Inflow velocity should be 0.53m/s or better • Instant start fluorescent lamp intensity should be around 1100 lux or better. • Low sound emission. • There should be UV protected sliding front sash which can be fully opened to insert and remove large instruments. • The cabinet should come with following accessories: - Should be at least 2 nos. UV lamps, minimum two nos. electrical outlet sockets, and antimicrobial coated SS movable stand with wheels & brakes for easy movement. 	
30	Light Weight Sterilizer	<ul style="list-style-type: none"> • Sterilizer for hospital and clinic use autoclave, boiler • Capacity: 10-16 Lit • Material: stainless steel • The stainless-steel sterilization box manufactured by using high quality stainless steel used for sterilization/disinfection of instruments and material. • Sterilizer fitted with backalite quality plastic handle and four legs 	1
31	Lyophiliser cum speed vacuum concentrator	<ul style="list-style-type: none"> • Microprocessor controlled and LED display of temperature. • Condenser temperature: -110°C (at an ambient of 20°C) for faster drying process of aqueous, organic solvent, other volatiles which have very low freezing point. 	1

		<ul style="list-style-type: none"> • Seamless surface condenser with external cooling coil with large surface area without gasket or seals to avoid leakage. • The condenser trap which is normally prone to corrosion should be made of highest quality rust free stainless steel to prevent corrosion at any case. • Cold trap : - 110 °C • Condenser dimension, minimum : 160 x 180mm • Total condenser volume minimum: 4L • Condenser capacity per 24 hours minimum: 2.5kg. • Total Condenser capacity Minimum : 3kg, • Low Power consumption • Materials: Cabinet polyester coated steel, Condenser stainless steel • Built-in Drain tap • Digital temperature read-out • Acrylic plate on the top of the Cool Safe including vacuum release. • The Pump is built in Oil mist filter and anti-suck back device valve to prevent back flow of pump oil during power failure, Vacuum 0.001m Bar-Inclusive anti suck back device. Pump speed: 2.3 cfm (60 lit /min) • Acrylic chamber dia Ø200mm with 6 port & cocks with bottom and top lid. • Adapter for flask 100 to 250 ml • Adapter for flask 250 to 500 ml • For AMPOULE DRYING, Ampoule Tree , Ampoule sealing torch, Ampoule for freeze drying made of glass • Stand-alone vacuum centrifuge Standard Teflon coating. Rotor 48 ×1.5-2.0 mL and 76 x 0.5 ML Eppendorf tubes • Auto/start stop, Timer function, Pressure Read out. • Rpm: 1400 (Adjustable) • Heat Temp. Range : + 5 to + 80 °C • Suitable pump • Adaptor for Scan speed Pipe for hose connection between 3/4 rubber valve and Scan Speed Connection kit for Vacuum Centrifuge and COLD TRAP • All other accessories 	
32	Magnetic stirrer with hot plate: 1 Lit	<ul style="list-style-type: none"> • Number of stirring positions : 1 • Stirring capacity maximum: 1 Lit • Direction of rotation : right • Speed display set-value : LED • Speed display actual-value : LED 	2

		<ul style="list-style-type: none"> • Speed range : 50 – 1500 rpm or more • Set-up plate material : Aluminium alloy • Connection for ext. temperature sensor : PT1000 • Set-up plate dimensions [mm] : Ø 135 • Temperature setting range : 300 °C or above • Protection class according to DIN EN 60529 : IP 42 • magnetic bit and retriever. 	
33	Magnetic stirrer with hot plate: 5 Lit	<ul style="list-style-type: none"> • Number of stirring positions 1 • Stirring capacity maximum: 5 Lit • Direction of rotation left • Speed control scale 0 - 6 • Speed range 100 – 1500 rpm or more • Heating temperature range : 50 – 500 °C • Heat control stepless • Heating rate heating plate [K/min] 2.5 • Connection for ext. temperature sensor PT1000 • Fixed safety circuit • Set-up plate material ceramic, dimensions [mm] 100 x 100 • Protection class according to DIN EN 60529 IP 21 • magnetic bit and retriever. 	2
34	Microscope	<ul style="list-style-type: none"> • Easy to Handle and cord wrap allows easy carrying, easy lifting, and protection against microscope component damage • LED illumination saves the cost of replacement lamps and provides a cool white light for over 10 years+ of average use • Patented time delay shutoff saves energy • Ag Treat additive at touchpoints to prevent bacteria spreading from student to student • DM 750 Brightfield Plan Standard Outfit which includes: Right Hand Stage Stand with Standard Illumination, Add on Lens for Condenser, • 4 Position nosepiece, • Universal Power Supply plus USB Power with integrated connector, • mechanical stage with non-extending rack and slide holder, • LED illumination, • Auto Off, built in handle and cord wrap, • Dust Cover, User Manual 	1

		<ul style="list-style-type: none"> • - 45 degree Binocular Tube with locking mechanism for eyepieces Abbe Condenser 0.9Dry/1.25 Oil with slot for Phase and Darkfield Sliders and labels for matching Objective magnifications 10X/20 eyepiece w/eye guard 10X/20 focusing eyepiece w/eye guard Plan 4X/0.10NA, 18.0mm W.D. Plan 10X/0.25 NA, 12.0mm W.D. Plan 40X/0.65 NA, 0.36mm W.D. Plan 100x/1.25 NA, 0.10mm W.D. and India power cord. • Microscope Camera with software using PC for Live image 1920x1080p directly to an HD display or for image capture to SD card (No PC required) • Maximum Image size 5.0 Mpixel (2592 x 1944) & Complete camera kit contains Camera Module, USB2 cable 1.8m, HDMI cable 2.5m, imaging software for basic image capture and simple measuring and annotation applications. • One suitable PC for analysis software. 	
35	Microtome	<ul style="list-style-type: none"> • Motorised Feed & Sectioning • Motorised Sectioning at three different speeds • Four Sectioning Modes: Programmed, Continuous, Step & Manual • Section & Trimming Thickness Display • Section Counter • Automatic/Manual Control • Continuous Section/Single Section Control • Fast Forward/Backward Function • Section/Trimming Change Over • Automatic Memorization & Recovery • Removable Section Waste Tray for easy cleaning • Emergency Stop • Ergonomic Design • Section Thickness Setting: 0.5-100 microns • Setting Values: <ul style="list-style-type: none"> • From 0.5 - 2 micron in 0.5 micron increments • From 2 - 10 micron in 1 micron increments • From 10-20 micron in 2 micron increments • From 20-100 microns in 5 micron increments • Trimming Thickness: 1-600 microns • Setting Values <ul style="list-style-type: none"> • 1-10 microns in 1 micron increment • 10-20 microns in 2 micron increments • 20-100 microns in 10 microns increments • 100-600 microns in 50 micron increment 	1

		<ul style="list-style-type: none"> • Object Feed: 28mm • Vertical Stroke: 60mm • Specimen Retraction: 5 - 100 microns in 5 micron increment ; can be deactivated • Specimen Orientation: X-Y 8 deg. & Z 360 deg. • Specimen Size: 50 x 50 mm or more • Specimen Clamp Orientation: 360 degrees 	
36	Microwave	<ul style="list-style-type: none"> • 28 lit capacity, • Soft control, Completion Alarm • Timer: 30 second - 99 minutes • Accessories glass/ceramic tray, Hand gloves 	1
37	Mini Spinner	<ul style="list-style-type: none"> • Rotor Position : 8 • Tube Capacity : 1.5/2.0/0.2/0.5 ml • Speed : 6000rpm or more • RCF : 2000 or more • Display : Digital 	2
38	Mini Tissue Homogenizer (for capacity of 1ml to 100ml)	<ul style="list-style-type: none"> • Small Hand held/post mount dispersing instrument • Treatable volumes Range from 0.5ml - 100 ml (H2O) • Should be compatible with Stainless steel and Plastic dispersing elements, • Should be supplied with SS dispersing tool of volume range (1ml to 100ml), Boss head clamp, SS Stand and SS Holding Plate. • Extension arm diameter 8 mm and Extension arm length 100 mm. • Motor rating input : 120 to 125W & output : 70-80 W • Viscosity Range : 4500 to 5000 mPas or better • Speed range : 8000 – 30000 rpm or better • Speed display scale with step less speed control • Extension arm diameter 8mm & length 100mm • Instruments Weight should be not more than 0.5 kg • Protection class according to standards • Any other accessories for a complete working system • Warranty : 3 years 	2
39	Mini Tissue Homogenizer (for capacity of 10ml to 1500ml)	<p>Homogenizing / dispersing instrument that enables to work at high circumferential speeds even with small rotor diameters. Should have a broad choice of dispersing elements for a wide range of applications.</p> <ul style="list-style-type: none"> • Digital LED speed display, Speed Range: 3000 to 25000 rpm with speed accuracy $\pm 1\%$ or better. • Should have Electronic step less speed control and overload protection. 	

		<ul style="list-style-type: none"> • Should available Stainless steel dispersing elements (Tools) • Instrument Treatable sample Volume range: 1 ml to 1500ml or more • Treatable Sample Viscosity Range : up to 5000mPas • Noise Level without element should not be more than 75 DB. • Extension arm diameter should be 13 mm and Extension arm length should be 160 mm • Instruments safety /Protection class according standards. <p>Accessories should include in supply</p> <ul style="list-style-type: none"> • Dispersing Element: 10-1500ml, Shaft length: 204mm minimum , Rotor/Stator Diameter: 19/12.7mm, Gap between Rotor/Stator: 0.4mm. • Plate Stand and Bosh Head Clamp • Any other accessories for a complete working system • Warranty: Minimum Three years 	
40	Muffle Furnace with all accessories	<ul style="list-style-type: none"> • Light Weight, • Outer casing made of thick PCRC sheet, duly powder coated, heating elements made of Kanthal. • A-1 wire are wound on the ceramic muffle, ceramic fibre insulation is provided on all sides. • Temperature controlled by Digital temp. controller cum indicator, fitted on the front with two pilot lamps, one pyrometer, thermocouple, • Thermal fuse, main lead with power plug to work on 220/230 volts or • 400/440 volts A.C. • Max. Temperature is 1000°C, • working temperature 900°C. • Muffle Size minimum (W x H xD) : 300 X 150 X 150 mm 	1
41	NanoDrop Spectrophotometer with all accessories	<ul style="list-style-type: none"> • Drop-and-start analysis : To analyze a sample user has just drop it onto the target and click the button. The instrument should perform the measurement and wiping automatically. • Quick & Simple operation: Blank measurement, sample measurement, output of reports and other basic operations must be performed quickly & simply just by a click of button. • Basic operations should be performed by clicking icons in the software. • Wide wavelength range of 800 nm to 220 nm 	1

		<ul style="list-style-type: none"> • 3 nm spectral bandwidth over entire wavelength range • Wavelength accuracy: ± 1nm • Path length 0.2 mm, 0.7 mm • Photometric range 0 to 1.5 Abs or better • Minimum Sample volume : 1μL (pathlength: 0.2 mm) • Light source: Xenon flash lamp • Detector: Photo diode array • Monochromator based holographic grating for high energy throughput and high-quality monochromatic light • Auto wiping function must be Provided • Sample mount function must be Automatic • Spectrum measuring time: 3 Sec or less. • Quantitation range (OD, dsDNA concentration) : Path length 0.2 mm, 1 to 75 OD 50 to 3,700 ng/μL, Path length 0.7 mm, 0.3 to 21 OD 15 to 1,000 ng/μL or better • Analysis mode must be Simple nucleic acid quantitation, labelled nucleic acid quantitation • Simple nucleic acid quantitation must be Nucleic acid concentration (RNA, dsDNA, ssDNA, Oligo DNA) calculation, OD ratio (OD260 / 280, OD260 / 230) calculation • Labelled nucleic acid quantitation must be Nucleic acid concentration (RNA, dsDNA, ssDNA, OligoDNA), nucleotide concentration calculation, Label concentration, labelling ratio calculation, OD ratio (OD260 / 280) calculation • Protein Quantitation must include Protein concentration (M, μg/mL), label concentration, labelling ratio. • Photometric measurement must have OD display for 8 wavelengths maximum • Label management: Label registration (up to 8 new labels), edit, deletion, Default labels (Cy 3, Cy 5, Alexa Fluor 546, Alexa Fluor 647) • Wiping paper must be supplied 100 sheets • Suitable Branded PC with OS must be supplied. • 2 years warranty from the date of installation 	
42	Online UPS 30KVA 3phase 2 hrs backup +	A) Online UPS 30KVA 3phase 2 hrs backup- 4 Nos	4 Each

<p>Inverter 5KVA 1hr backup</p>	<ul style="list-style-type: none"> • General: 30 KVA Online UPS single module • Topology: True Online Double conversion UPS with PWM-IGBT Technology • Capacity: 30KVA/24kW @0.8pf • AC Input Voltage: 285V-485V (3PH+N) • Input Frequency: 50Hz ± 10% • AC Output Voltage: 3x380VAC/400VAC±1%(3PH+N) 415VAC adjustable • Overload: 150% for 60 sec. >160% for 200ms • Output Frequency: 50 Hz ± 0.1 Hz • Output waveform: Sinusoidal (Sine Wave Output) • Charging current: Min 20 amp • Inverter Efficiency: Better than 93% • Isolation Transformer: UPS output should be fully isolated by double conversion and isolation transformer which should be inbuilt in same single cabinet • Protection: Reverse Phase sequence & No Neutral operation required; Over temperature indication & protection • Ambient Conditions: Operating Temp: 0–55 Deg C • Relative Humidity: 90% Max. Non condensing • Display: Smart LCD Display with real time information • Indications & Audible Alarms: Mains On, Inverter On, Overload, Load On Mains, Load On Battery, Battery Low Over temperature • Bypass: Built-in Static & Maintenance Bypass • Battery Type: Maintenance Free • Battery Runtime: The system must be capable of providing 120 minutes of battery backup time. Battery make: Exide • Warranty : One year comprehensive on-site original equipment manufacturer (OEM) warranty including two years on batteries (OEM should have own Branch office & service center in Northeast) • ISO Certifications • Call centre: OEM to have call log in facility for call log through call centre • Installation and battery and battery rack should be included. 	
---------------------------------	--	--

		<p>B) Inverter 5KVA 1hr backup- 4 Nos</p> <ul style="list-style-type: none"> • General: 5200VA/48VDC • Topology: Intellipure sinewave • Capacity: 5.2KVA/4.16kW @ 0.8pf • AC Input Voltage:110V-280V • Input Frequency: 50Hz ± 10% • AC Output Voltage: 230VAC ± 10%, 1Phase • Output Frequency: 50 Hz ± 0.2 Hz • Output waveform: Pure Sine Wave Output • Inverter Efficiency: Better than 80% • Overload: Upto 110% • Display: Smart LCD Display • Indications & Audible Alarms: Low battery, Battery overcharge, Overload, Over temperature, Short circuit • Mains Bypass: Rotary Bypass Switch • Battery Type: Sealed Lead-Acid, Maintenance Free; Tubular • Ambient Conditions: Operating Temp: 0–45 °C, Acoustic at 1Mtr<45dB, Relative Humidity: 95% Max. Non condensing; Integrated cooling (Fan & Heat sink), • Battery Runtime: The system must be capable of providing 60 minutes of battery backup time. Battery make: Exide • Warranty: One-year comprehensive on-site original equipment manufacturer (OEM) warranty and 2 years on batteries. (OEM should have own Branch office & service centre in Northeast) • ISO Certifications • Call centre: OEM to have call log in facility for call log through call centre • Installation and battery and inverter trolley/ battery rack should be included. 	
43	Petri dish Turntable	<ul style="list-style-type: none"> • For continuous use, or intermittent operation with adjustable speed from 10 to 100rpm, • a timer from 3 seconds to 2 minutes, or continuous setting. 	1

		<ul style="list-style-type: none"> Accommodates 90 to 100mm diameter petri dishes and 150mm dishes using an accessory adapter must be included. 	
44	pH Meter	<ul style="list-style-type: none"> Auto Calibration Auto Buffer Recognition Auto Temperature Compensation Auto Temperature Sensor Select 5 or 3 Buffers Calibration Points On Display Temp & Toggle to pH/ Mv Custom Buffers Selection NIST, USA & Custom Buffer with temp Selection Easy Dialogue mode software Electrode indication at calibration Error detect on Calibration while wrong with buffer or electrode <p>Measurements</p> <ul style="list-style-type: none"> pH: 0.00pH to 14.00 pH Resolution : 0.1pH Limits of error: + - 0.01pH mV: -512mV to +512mV Resolution : 1 mV Limits of error : + - 0.3 mV Temp : 0 C to 99 C Resolution : 1 C Limits of error : + - 0.3 C Temp : Celsius of Fahrenheit Calibration buffer should be provided with the system. 	2
45	Pipetemen Full Set with pipet stand	<ul style="list-style-type: none"> Single channel variable volume micropipette, Adjustable volume, fully autoclavable. Spring Loaded Tip Cone for connecting tips very tightly Adjustment opening for adjusting pipettes to a specific liquid and volume. Control Button with very low operating force. Tip ejector with very low operating force, positioned for perfect ergonomics. Volume Display: 4 Digits with magnifier. To provide thermal, mechanical and chemical stability piston should manufactured from Fortron material Very easy removable lower part for cleaning pipette 	1 set

		<ul style="list-style-type: none"> • Fully Autoclavable Volume Unichannel 0.5-10 μL, 2-20 μL, 10-100 μL L, 20-200 μL, 100-1000 μL, 0.5-5 mL), • TIPS Box and a table top Pipette stand. • Compatible with Third party tips (Universal Tips). 	
46	Plant culture Racks with Lights	<ul style="list-style-type: none"> • Size of Racks: Height of rack 152 cm (5'). Width 127cm (4'.2") • Shelf Dimension: 122 \times 45 cm (50" \times 18"). • Shelf to Shelf Distance: 35 cm (15"). • Shelf Colour: Square M.S. pipe white shade powder coating finish with anti-corrosive and humidity resistant. • Shelf Material: 3mm Hylem sheet. • Shelves: illuminated shelves in one rack are: 04nos. • Total no. of Shelves (including top) in one rack: 05 nos. • Fluorescent Tube lights: Four 40W tube lights (Philips) in each shelf of each rack, with 2 nos. of electronic ballast chokes; one is for operating two tubes. Total no. of tube lights in one rack: 16 nos. with electronic ballasts = 8 nos. • One main switch for each castor rack. • One separate switch is provided for every 2 tubes. • One fuse for one rack. • Four castor wheels in a rack for easy movability. • Side holder rods, on each shelf prevent the bottles etc. from falling from the three sides of a shelf, i.e. On the left, back & right. Front side is used for keeping or removing the bottles etc. 	30
47	Plant Growth Chambers	<ul style="list-style-type: none"> • Heating : Forced Air Convection Cooling : CFC Free Air Cooled Compressor. • Humidifier: Water Boiling Humidifier • Temp. Range: +0°C ~ 60°C, • Accuracy: \pm 0.3°C at 20.0°C, 60% RH, Uniformity : \pm 1.0°C at 20.0°C, 60% RH • Humidity Range: 30 ~ 98% RH (Sensor Range), : 30 ~ 85% RH , Accuracy : \pm 3.0 % RH at 20.0°C, 60% RH, • Humidity Sensor, Electronic Sensor :, • Illumination : 0 ~ 30,000 Lux by minimum 8 Step Combination, • Light Sensor : Lux Meter with 1 Lux resolution, • CO2 Range : ambient to 5,000 ppm (~ 20 %) 	1

		<ul style="list-style-type: none"> • CO2 Sensor: Dual Wavelength NDIR Diffusion, Controller: Programmable PID Control / 11 Segment 999 Cycle Repeat • Safety : Over-Temperature Cut-Off / Over Current Cut-Off, Low Water Level Cut-Off, • Material : Body : Epoxy Powder Coated Steel, : • Chamber : Stainless Steel 304, : • Double Layer Vacuum Glass Window on Light Bank, Including PVC Coated Wire Shelf, • Chamber Volume : minimum 430 L, • No. of Shelves : 3 or more, 	
48	Rack	<ul style="list-style-type: none"> • 5 shelf-shelving units. • Steady enough for bulky weights. Bearing capacity is 80 kg per Shelf. • Multipurpose rack- It is useful for store room purpose, Books rack, etc. • Fold-able rack/easy nut bolt folding system/heavy material rack. • Product dimensions: minimum 5 x 2 x 1 feet with 5 shelves 24 gauge C.R.C. Sheets. 	20
49	Real Time PCR Thermal Cycler with accessories	<ul style="list-style-type: none"> • Includes Modular thermal cycler platform, Software, reagents, consumables. <p>Features and Benefits:</p> <ul style="list-style-type: none"> • Detection of up to 5 targets per well, plus a channel dedicated to single plex Fluorescence Resonance Energy Transfer (FRET) • Protocol auto writer that generates an optimal protocol for your reaction components • Thermal gradient feature that identifies optimal annealing temperature in a single run • Software for reliable validation, data analysis, and export of RDML files for conformance with MIQE guidelines. <p>Technical data:</p> <p>Thermal Cycler</p> <ul style="list-style-type: none"> • Maximum ramp rate 5 °C/sec: • Average ramp rate 3.3 °C/sec • Heating and cooling method: Peltier • Lid Heats up to 105°C: <p>Temperature</p> <ul style="list-style-type: none"> • Range: 0–100, °C • Accuracy, °C: ±0.2 of programmed target at 90°C 	1

		<ul style="list-style-type: none"> • Uniformity, °C: ± 0.4 well-to-well within 10 sec of arrival at 90°C <p>Gradient</p> <ul style="list-style-type: none"> • Operational range, °C: 30–100 • Programmable span, °C: 1–24 <p>Optical Detection</p> <ul style="list-style-type: none"> • Excitation: 6 filtered LEDs • Detection: 6 filtered photodiodes • Range of excitation/emission wavelengths, nm: 450–730 • Sensitivity: Detects 1 copy of target sequence in human genomic DNA • Dynamic range: 10 orders of magnitude <p>Scan Time</p> <ul style="list-style-type: none"> • All channels, sec: 12 • FAM/SYBR® Green only, sec: 3 <p>Software</p> <ul style="list-style-type: none"> • Multiplex analysis: Up to 5 targets per well <p>System</p> <ul style="list-style-type: none"> • Licensed for real-time PCR • Sample capacity, wells: 96 • Sample size, μl: 1–50 (10–25 recommended) • Communication interface: USB 2.0 • Electrical approvals: IEC, CE <p>Accessories</p> <ul style="list-style-type: none"> • Compatible PC • Consumables for 20 runs. • 2 years onsite Warranty. 	
50	Refrigerated Centrifuges with rotor 1.5 ml, 15 ml, 50 ml 250ml swing out rotor. 14000rpm	<ul style="list-style-type: none"> • Refrigerated bench top multipurpose centrifuge with at least 1.5 litres capacity. • CFC free refrigeration system. • Microprocessor controlled with large LCD display. • Systems should be able to run different angle rotors and swing out rotors with adapters to us different tube formats. • Speed: adjustable from 200 to 16,000 rpm with 10 rpm Increments. • RCF : 24000 x g or more • Temperature range: -10°C to ambient with 1°C increment. • Pre-cooling program option. 	1

		<ul style="list-style-type: none"> ● Pre-selection of running time : up to 99 hrs 59 min or continuous ● Storage of up to 60 runs or more incl. rotor type. ● Quick-Key for short runs ● Permanent indication of pre set & actual values. ● 10 acceleration and deceleration rates, possibility of unbraked deceleration. ● Splash proof large LCD display ● Motor driven lid lock ● Active imbalance identification & cut-off protection. Imbalance tolerant drive pin. ● Automatic rotor identification system with over speed protection ● Audible signal at the end of each run. ● Noise level under 65 dBA at maximum speed. ● Should be manufactured according to standard & conforms to CE-requirements. ● Rotors and rotor lids must be metallic and fully autoclavable, hermitically sealed. ● Warranty : 02 years' from the date of installation. ● The system should be completed with following rotors: <ul style="list-style-type: none"> a) Swing out rotor , 4 places RCF : 3700 x g - 4000 x g With bucket/adapter for 50 ml and 15 ml. b) Fixed Angle rotor for 6 x 50ml., RCF : 15,000 x g - 18,000 x g Adapters for 15 ml. tubes must be provided. c) Fixed Angle rotor for 24 x 1.5/2.0 ml., aerosol tight, RCF : 24,000 x g - 26,000 x g. 	
51	Refrigerated High Speed Centrifuge with rotor 1.5 ml, 15 ml, 50 ml,	<ul style="list-style-type: none"> ● CFC free refrigeration. ● Maximum Speed 28000 rpm -30000 rpm, Minimum 200 with 10 rpm increments. ● Maximum RCF 65000 x g or more. ● Maximum volume can handle 1500 ml. ● LCD indication of pre set and actual values of speed, RCF, time, temperature & running time. ● Digital display. ● 10 acceleration and deceleration rates with storage of up to 99 runs. 	1

		<ul style="list-style-type: none"> • Direct access to parameters, no click through the programme. • Built in timer from 30 sec to 99 hrs. 59 min or continuous. • Temperature range -20°C to +40°C with 1⁰ increments. • Stand still cooling & pre-cool programme option. • Quick key for short runs. • Motor driven lid lock. • Automatic rotor identification system with over speed protection. • Active imbalance identification & cut-off. • Stainless Steel chamber. • Audible signal at the end of each run. • Noise level < 65 dBA at maximum speed. • Should manufactured according to standard & conforms to CE-requirements. • Centrifuge should be completed with fixed angle rotor 6 x 50 ml, maximum RCF approx. 40000 x g, with adapters for 15 ml. tubes. • Angle rotor 12 x 1.5/2.0 ml, maximum RCF approx. 65000 x g . 	
52	Refrigerator 4°C Lab Grad	<ul style="list-style-type: none"> • Capacity minimum 340 Lit to 400 lit • Temperature Range: 2°C - 10°C or better • Wheels: Yes • Lock: Yes • No. of Shelves: 4+ • No. of Lids/Doors:1 • frost free 	6
53	Rotary Evaporator with chiller and all accessories	<p><u>Rotavapor</u></p> <ul style="list-style-type: none"> • Electronic lift with provisions for automatic lifting of the flask in case of power failure. • Rotation speed up to 280 rpm or better with microprocessor control. • Cooling surface area of 1500 cm² • End stop positioner adjustable via button within a range of 170 mm with a stroke distance of 220 mm. • Multifunctional combi-clip for easy removal and fixation of evaporating flask • 7-stage adjustable immersion angle for the use of different flask sizes with maximum adjustable angle of 40 degrees. 	1

		<ul style="list-style-type: none"> • Large top hole Vertical condenser with Screw cap SVL 22 and P+G coating • Digital display of set and actual bath temperature, rotation speed and lift position. • Microprocessor controlled bath temperature ranging from ambient to 220 deg C with an accuracy of ± 1 deg C. • Transition of heating bath data to interface through Infrared Communication. • Automatic over heat cut-off protection • Cordless heating bath for easy emptying and filling of water bath without removing electrical cables. • Evaporating flask from 50-5000 ml can be used on the same joint adapter without additional connections. • 1 litre Evaporating Flask and Receiving Flask should be provided in standard scope of supply. • IP 21 Protection Class. <p><u>Vacuum Controller Interface</u></p> <ul style="list-style-type: none"> • Control unit with LCD display for centrally controlling all process parameters of a Rotavapor like rotation speed, bath and coolant temperature, pressure, process time etc. • Manual management of pressure settings and aeration with timer function • Clock-wise and anti-clockwise rotation of evaporating flask for a defined time range. • Automatic aeration when pressure is above 1400 bar. • Integrated solvent database for setting up dynamic distillation conditions. • Integrated wear part library for common wear parts with order code. • Integrated leak test to check possible leaks • Measuring range: 1400- 0 mbar. • Control range: ambient to 0 mbar. • Remote control of Rotavapor, Pump and Chiller • Woulff bottle included <p><u>Vacuum Pump</u></p> <ul style="list-style-type: none"> • Single stroke Speed control vacuum pump with a flow rate of 1.8 m³ /h. • Ultimate Vacuum: 5 mbar • Chemically resistant diaphragm made of PTFE • Glass window to check solvent build up and contamination. 	
--	--	---	--

		<ul style="list-style-type: none"> • Sound Level adjustable as per EN 61010-1 between 32-57 dBA. • Power saving mode. • Secondary condenser to be supplied with the system. <p><u>Re-circulating Chiller</u></p> <ul style="list-style-type: none"> • Compact and Robust Re-circulating Chiller with a cooling capacity. • Temperature Range: -10 to 25 °C • Pump Capacity: 2.5 litres/min at 0.6 bar • Coolant: CFC Free 	
54	Seed Germinator	<ul style="list-style-type: none"> • Size 8' x 7 'x 9' (L x W x H) (Outer dimension). • Suitable Racks. • Temp. Range: 20 to 45°C • Humidification: 80 to 90 % • Control: microprocessor temperature & humidity Control system • Illumination: Normal • Structure Frame: all galvanized steel is used and, complete pre -machined Structure and cladding with puff panel 63mm with inner/outer pre quoted GI sheet. • Construction: Pre-fabricated double-walled chamber with insulation with puff between interior. • Inner Chamber: Made of stainless-steel sheet of good quality. • Outer Chamber: Made of powder coated sheet. • Door: Door with inner viewing facility (To inspect the samples without disturbing the temperature of working chamber) with proper lock and key and fitted with sweeping gasket and glass. • Floor: anti-slippery hard material. • Note: The cold room will be installed allocated space inside the main building. Firms are requested to visit the site for further clarification. 	1
55	Shaker (Temperature controlled)	<ul style="list-style-type: none"> • Compact table top or bench top refrigerated shaker with minimal foot print • Speed: 30-350 RPM with accuracy of maximum +/-2% RPM deviation of the set value. • Drive: non geared DC Motor with permanent magnet drive connected with timer pulley. • Shaker must have Movement incorporated by triple eccentric Pin with Counter Balance mechanism mounted on three permanently lubricated bearings 	6

		<p>fitted with housing to ensure non deviated amplitude of 25 mm for uniform growth of culture</p> <ul style="list-style-type: none"> • RPM Indication: Digital • Temperature Range: 10° to 70° C with and accuracy of ; $\pm 0.1^{\circ}\text{C}$ • Temperature Sensor should be platinum tipped grade 100. • Temperature control should be of PID based microprocessor controller with digital Indication. • Heater Power: approx. 500 W finned tubular heater • Temperature control with visual and / or audio alarm for temperature over / under shoot. • Illumination light should be come with the system and Should have option for future upgradable with photosynthetic light bank • Temperature control should have in built Surge protection to prevent control parameters deviations during power fluctuations. • Universal tray of size upto 420x420mm to accommodate minimum 36 Nos. of 100 ml (or) 25 Nos. of 250 ml. (or) 16 Nos. of 500 ml. (or) 9 Nos. of 1000 ml. (or) 4 Nos. of 2000 ml. • System should capable to accommodate 2litre Erlenmeyer flask • MOC: MS Powder coated steel. • Large double glazed glass viewing window for viewing the culture • Electrical Requirement: 230 V, 16 A, Single Phase, 50 Hz. • Unit should comply universal standard safety measures of CE certified. • Should be ISO 9001- 2015 Certified Company. • Manufacturer should be renowned company • Related published document, web links and list of publication in support of your claims on shakers supplied/manufactured by you. <p>Accessories:</p> <ul style="list-style-type: none"> • Clamp with each machine: 100ml x10 nos. clamp, 250ml x 25 nos. clamp, 500ml x 6 nos. Clamps, 1000ml x 2 Clams, 2000ml x 2 clams 	
56	Simple Microscope with different Eye piece	<ul style="list-style-type: none"> • Body : High resistive metallic body including gear. • Housing Assembly : Magnification 	4

		<ul style="list-style-type: none"> • Viewing Head Sliding : Interchangeable with Monocular heads inclined at 45° and rotatable through 360°. • Eyepiece : Wide filed Eyepiece 5X -6X -10X • Objectives : Anti –Fungal Achromatic objective 4X, 10X, 45X. • Nosepiece : Quadruple Nosepiece • Mechanical Stage : Coaxial Mechanical Stage . • Focusing Range : Coaxial Coarse and fine adjustment. • Illumination : 6V 20W Halogen Lamp or LED or better, Brightness adjustable. • N.A.1.25 Abbe Condenser Iris-diaphragm and filter holder. • Stage size 135 x 120 mm, with 2 spring mounted stage clips. • Filter : (Blue Green Yellow) 	
57	DSLR Camera (with Different Lens)	<ul style="list-style-type: none"> • Sensor: APS-C CMOS Sensor with 24.2 MP (high resolution for large prints and image cropping) • ISO: 100-25600 sensitivity range (critical for obtaining grain-free pictures, especially in low light) • Image Processor: Expeed 4 with 11 autofocus points (important for speed and accuracy of autofocus and burst photography) • Video Resolution: Full HD video with fully manual control and selectable frame rates (great for precision and high-quality video work) • Connectivity: WiFi, NFC and Bluetooth built-in (useful for remotely controlling your camera and transferring pictures wirelessly as you shoot) • Dust-reduction system: Image Dust Off reference data ; Operating environment: Temperature: 0 °C to 40 °C (+32 °F to 104 °F) Humidity: 85% or less (no condensation) ; AC adapter: EH-5c/EH-5b AC adapter. • 18-55mm & 70-300mm Lens, Camera Battery, Battery charger, Camera Tag. User Manual • 32GB Card. • Suitable Camera Mounting for overhead shoots. • Carry Bag 	1
58	Sonicator with sound proof encloser	<ul style="list-style-type: none"> • Operating frequency: 30 kHz • Output: max. 100W • Output settings: 20 to 100 % 	1

		<ul style="list-style-type: none"> • Duty cycle (pulsed operation): 0 to 100 % • Setting times: by means of an optional timer • PC-connection: Optional, socket integrated • Operating temperature: + 5 to + 40 °C • Limits of humidity: 10 to 90 %, non-condensing • Sonotrodes are made of Titanium and solid type that is without replaceable tip. • Two sonotrodes for samples 2ml to 50 ml and 0.1 ml to 5ml and Timer from 0 to 99 mins 59 secs. • Sound protection box will be supplied locally along with the machine. 	
59	Suction Pump	<ul style="list-style-type: none"> • Oil free pump • Pressure gauge for monitoring pressure. • 3 mtr silicon pipe with connector • Flow minimum 15 l/m 	1
60	UV Transilluminator	<ul style="list-style-type: none"> • Illuminated Area: 20 x 20 cm • Lamps: .Five 8 W, 302 nm UV (included) • Selection Switch High : 9,000 μW/cm² Low : 7,000 μW/cm² • Safety Certifications: EN61010-1, UL3101-1, CSA22.2 1010.1, CE <p>Features:</p> <ul style="list-style-type: none"> • UV safety cover minimizes personal exposure • Uniform illumination Shortwave UV lamps are available to change illumination from 302 nm to 254 nm Adjustable intensity operation for analytical or preparative applications • Anti Slip rubber foot provided for base. 	1
61	UV-VIS-Spectrophotometer	<ul style="list-style-type: none"> • Stand-alone operation or complete control through PC with PC software • True double beam optics with aberration corrected concave blazed holographic grating in Czerny – Turner mounting for high energy throughput and high-quality monochromatic light • Wide wavelength range of 1,100 nm to 190 nm • High resolution 1 nm spectral bandwidth over entire wavelength range • Wavelength setting and display in steps of 0.1nm • Wavelength accuracy of \pm 0.1nm for D₂ spectral line • Wavelength reproducibility of \pm 0.1nm • Wavelength Slew rate: approx.. 29,000 nm/min 	1

		<ul style="list-style-type: none"> • Variable wavelength scanning speed: $\geq 3,000$ nm/min to 2 nm/min, 29,000 nm/min when survey scanning • Ultra low stray light of $<0.02\%$T at 220nm with NaI filter • Photometric range of -4 to +4 Abs and 0 to 400 %T • Photometric Accuracy of ± 0.002 Abs at 0.5 Abs • Photometric Repeatability of Less than ± 0.0002 Abs at 0.5 Abs • Baseline stability: < 0.0003 Abs/Hr (700 nm, one hour after light source turned ON) • Photometric noise of < 0.00005 Abs (700 nm) • Dual source – high intensity Tungsten-Halogen and Deuterium lamp with automatic changeover • High sensitivity matched pair Silicon Photodiode detector • 4 USB ports or more for high-speed PC and printer connectivity, data storage and transfer through USB pen drive • Guaranteed compliance with all Pharmacopoeia requirements. • Built in validation program, diagnostic and security functions. • The instrument should provide network access via wireless connectivity. Data can be transferred to a PC via a network • The instrument should have Sleep mode and wake up function: Analysis can start the instant the user arrives at the laboratory. The instrument should require no time to warm up. • All operational modes as standard – Photometric; Spectrum; Quantitation; Kinetics, Time Scan, DNA and Protein Quantitation in standalone and PC mode. Additionally, Multi-Component measurement available in stand-alone mode. • Must supply 3 (three) pair of Quartz Cuvettes as a standard supply. • Must supply Compatible PC and software for proper functioning of the Instrument though PC. 	
62	Vacuum Pump	<ul style="list-style-type: none"> • Max Flow Rate up to : 37L/minute. • Max. Vacuum up to : 813mbar(24 In.Hg). • Max. Pressure up to: 2.45bar(35 psig). 	1

		<ul style="list-style-type: none"> • Body & Pump Head : Corrosion-resistant cast aluminium pump head. • Buna-N with PTFE Lining Diaphragm. • Buna-N Head Gasket. • Internal pump surface :PTFE Coated . • Noise level : <65dB. • Pump comes with 70cm of 1/4inch vacuum tubing and Millex FA50 Vacuum protection membrane filter. • Pump provided as per UL Listed and CE marked. • Housing and regulator 	
63	Vortex Spinner	<ul style="list-style-type: none"> • Variable working motion • Easy to use touch on motion • Charming design • Max 3000 RPM <p>Specifications:</p> <ul style="list-style-type: none"> • Speed Range (RPM): 0~3000 • Operation mode: Touch on & constant on • Material: Steel powder coating &ABS • Head: Rubber powder cup & platform Head <p>Accessories:</p> <ul style="list-style-type: none"> • Adaptors- 1.5ml, 25ml, 50ml) 	1
64	Walk-in Cold Room (-20°C) (Dual Compressor)	<p>Size 9' x 8 'x 9' (L x W x H) (Outer dimension) The chamber Door will be attached with along the width. Temperature Range: - 20°C to ± 1° C Humidity range RH 20 % to 60 % . ± 5 % Rack and shields bottles should be provided, rack facility made of SS/MS, Suitable Racks.</p> <p><u>Main Technical Features:</u></p> <ul style="list-style-type: none"> • The room shall be constructed using Pre-fabricated Rigid Polyurethane Foam (RPUF) insulation of 40±2kg/m³ density insulated panels laminated with Pre-Painted Galvanized Steel (PPGS) lamination on outside and inside with plastic coated SS Steel serrations for the walls & ceiling. The lamination colour should be appropriate. The wall to wall & ceiling to ceiling shall have profiled edges and the joinery shall be with Tounge and groove type arrangement. The wall to ceiling joinery shall be held using flashing from inside & outside. All the resulting panel joinery should be applied with silicon sealant, suitable civil structure and pressure balancing ports. 	1

		<ul style="list-style-type: none"> • The floor insulation should be constructed using cement floor, aluminium floor plate with RPUF insulated panels laminated with 250 micron thick polythene sheet lamination acting as vapour barrier on both sides. Final floor finish above the insulated floor like PCC <i>etc.</i> should be under taken by the end user. • The Doors should be Automatic closing mechanism and posiseal closure with swing face mounted type in the rooms. The door frame and leaf should be provided with heaters for avoiding condensation as a resultant of moist air touching the cold surface. Door should be provided with internal safety release mechanism so that people when accidentally locked inside can come out even when the door is locked from outside. • The refrigeration system should be Freon based split type of suitable capacity with Air Cooled Condensing Units located outside the room and the Evaporator Units located inside the room. The condensing unit should house suitable capacity hermetic compressor for the positive rooms and Semi Hermetic Compressor for Negative room condenser coil and fans. • The evaporator and the condenser casing should be constructed using powder coated GI. The heat exchanger should be with copper tubes and Al fins. The evaporator should be provided with suitable fin spacing to allow sufficient frost build up to enable longer operation hrs between defrost. Defrost should be automatic. • The compressor on/off based on the load shall be controlled by a micro-processor based digital temperature controller which shall also control the defrost cycle, on/off of fans, fault indications <i>etc.</i>, thereby controlling the entire refrigeration system. • Controlling systems: Intelligent Climate Control System: It is a customized climate control system for monitors and control temperature Humidity and Light with recording facility with 7" Touch Screen Display (HMI 12 Inputs/ Outputs PLC DTC (Temperature Controls Card) Relay Card ten step controlling facility SMPS 24V Ethernet Port on HMI Light Controller Through PLC Control Panel with manual operating switchgears (all pushbuttons, Indicators).Standard Size PLC Control Panel Web Interface Data Logging (Temperature & Humidity). Manual Controlling (All 	
--	--	--	--

		<p>connected Equipment). Auto Control Mode with complete installation</p> <ul style="list-style-type: none"> • Refrigeration piping, fitting & valve: The Piping should be included accessories such as filter, drier sigh glass, heat exchanger, sucti online accumulator etc. Adequate number of supports should be included for pipe installation, pipe should be insulated with preformed section of pipe insulating material with water piping complete with fitting etc. should be thoroughly cleaned as per standard practice prior to installations. • Electrical Works: electrical control panel suitable for the system. Power wiring with ISI approved PVC insulated copper conductors with supports, cable trays <i>etc.</i> to be laid on walls/trenches/under the ceiling. As required as per drawings. Electric connection with distribution box should be provided by Firm. • Note: The cold room will be installed allocated space inside the main building. Firms are requested to visit the site for further clarification. 	
65	Walk-in Cold Room (4°C) (Dual Compressor)	<p>Size 9' x 8 'x 9' (L x W x H) (Outer dimension) The chamber Door will be attached with along the width. Temperature Range: 4°C to ± 1° C Humidity range RH 20 % to 60 %. ± 5 % Rack and shields bottles should be provided, rack facility made of SS/MS, Suitable Racks</p> <p><u>Main Technical Features:</u></p> <ul style="list-style-type: none"> • The room shall be constructed using Pre-fabricated Rigid Polyurethane Foam (RPUF) insulation of 40±2kg/m³ density insulated panels laminated with Pre-Painted Galvanized Steel (PPGS) lamination on outside and inside with plastic coated SS Steel serrations for the walls & ceiling. The lamination colour should be appropriate. The wall to wall & ceiling to ceiling shall have profiled edges and the joinery shall be with Tounge and groove type arrangement. The wall to ceiling joinery shall be held using flashing from inside & outside. All the resulting panel joinery should be applied with silicon sealant, suitable civil structure and pressure balancing ports. • The floor insulation should be constructed using cement floor, aluminium floor plate with RPUF insulated panels laminated with 250 micron thick polythene sheet lamination acting as vapour barrier on 	1

		<p>both sides. Final floor finish above the insulated floor like PCC <i>etc.</i> should be under taken by the end user.</p> <ul style="list-style-type: none"> • The Doors should be Automatic closing mechanism and posiseal closure with swing face mounted type in the rooms. The door frame and leaf should be provided with heaters for avoiding condensation as a resultant of moist air touching the cold surface. Door should be provided with internal safety release mechanism so that people when accidentally locked inside can come out even when the door is locked from outside. • The refrigeration system should be Freon based split type of suitable capacity with Air Cooled Condensing Units located outside the room and the Evaporator Units located inside the room. The condensing unit should house suitable capacity hermetic compressor for the positive rooms and Semi Hermetic Compressor for Negative room condenser coil and fans. • The evaporator and the condenser casing should be constructed using powder coated GI. The heat exchanger should be with copper tubes and Al fins. The evaporator should be provided with suitable fin spacing to allow sufficient frost build up to enable longer operation hrs between defrost. Defrost should be automatic. • The compressor on/off based on the load shall be controlled by a micro-processor based digital temperature controller which shall also control the defrost cycle, on/off of fans, fault indications <i>etc.</i>, thereby controlling the entire refrigeration system. • Controlling systems: Intelligent Climate Control System: It is a customized climate control system for monitors and control temperature Humidity and Light with recording facility with 7” Touch Screen Display (HMI 12 Inputs/ Outputs PLC DTC (Temperature Controls Card) Relay Card ten step controlling facility SMPS 24 V Ethernet Port on HMI Light Controller Through PLC Control Panel with manual operating switchgears (all pushbuttons, Indicators).Standard Size PLC Control Panel Web Interface Data Logging (Temperature & Humidity). Manual Controlling (All connected Equipment). Auto Control Mode with complete installation • Refrigeration piping, fitting & valve: The Piping should be included accessories such as filter, drier sigh glass, heat exchanger, suction online accumulator <i>etc.</i> 	
--	--	--	--

		<p>Adequate number of supports should be included for pipe installation, pipe should be insulated with preformed section of pipe insulating material with water piping complete with fitting etc. should be thoroughly cleaned as per standard practice prior to installations.</p> <ul style="list-style-type: none"> • Electrical Works: electrical control panel suitable for the system. Supply, Power wiring with ISI approved PVC insulated copper conductors with supports, cable trays <i>etc.</i> to be laid on walls/trenches/under the ceiling. As required as per drawings. Electric connection with distribution box should be provided by Firm. • Note: The cold room will be installed allocated space inside the main building. Firms are requested to visit the site for further clarification. 	
66	Water purification system.	<ul style="list-style-type: none"> • Resistivity 10-15 Mega Ohms with Flow Rate - 10 Ltrs./Hr and TOC < 30 ppb, • Automatic EDI – With Carbon Beads at cathode which doesn't required extra pre softening cartridges. • Minimum 3 No of Conductivity Cell to ensure the Input Output water quality. • RO pressure, RO water quality, RO membrane efficiency (% ion rejection) should be seen on display • Inbuilt Pre-treatment Cartridge- 0.5 Micron filter. pre-treatment pack contains silver-impregnated activated carbon which prevents the proliferation of Bacteria present in tap water; anti scaling compounds must to eliminate hardness and protect the RO membrane against oxidation, scaling and plugging. • RO with before and after conductivity cell to know the % rejection RO so that performance of RO can be seen in the display. • RO permeate is diverted to drain until the quality meets expectations. • Recovery loop to save wastage of reject water. Recirculation in regular interval should be from system and reservoir to maintain the water quality. • High quality Prefilter with Low pressure switch cuts off system, 5 Micron and 1 Micron with DC diaphragm pump to boost water pressure from 0 to minimum 2.5 bar at approximately 120 L/hr with low noise levels. • Iron Removal Filter must be with the backwash and rinse facility, capacity should be up to 400 L/Hr and 	2

		<p>which can take care up-to 4 ppm of Iron contamination.</p> <ul style="list-style-type: none"> • Product water Resistivity and % of RO rejection, RO pressure, RO water quality, RO membrane efficiency % ion rejection, RO feed water conductivity and Permeate water conductivity should on display. • Volume of main system's pre-treatment cartridge consumption should be display - so that service and cartridge replacement should be monitor by user. • Consumable status on the display- like pre-treatment so that user can easily understand no need to depend upon service person. • Alarms and alters. • <i>Cylindrical tank Capacity minimum 50 Liter-1 Nos.</i> • Extra 5 nos 5-micron and 5 nos 1-micron pre filter cartage should be provided with the system • All certificates need to be submitted along with tender. 	
67	Herbarium Sheet Scanner	<ul style="list-style-type: none"> • Flatbed Specifications Type A3 flatbed colour image scanner • Scanning Method Fixed document and moving carriage • Optical Sensor 4-line colour CCD • Light Source White LED Optical • Resolution 600 dpi x 600 dpi • Output Resolution 1 50 dpi – 4,800 dpi (1 dpi increments), 7,200 dpi and 9,600 dpi Max. Document Size A3 (11.7" x 17") 	1
68	Herbarium sheet Colour Printer	<ul style="list-style-type: none"> • A3 High resolution colour printer. • Printing Technology: 6-color (C, M, Y, K, LC, LM) or better. • Inkjet technology • Minimum Print Resolution: 5760 x 1440 optimized dpi • Photo Print borderless photo. • Operating Systems: Windows • High Gloss A3 Photo Paper 200 sheets need to supply with the system for printing the digital herbarium sheets. 	1
69	Dehumidifier	<ul style="list-style-type: none"> • Removing Moisture from a Relatively Large Space. • High Moisture Removal Capacity and Portability • 55 Litres/Day or higher 	2

		<ul style="list-style-type: none">• Automatic humidistat control• Auto Frost control• Manual Reset• Full Water Warning Signal.• Easier Mobility with Convenient Wheels.	
--	--	---	--