Gautam Buddha Universty

Greater Noida – 201 308

BID FORM

FOR SUPPLY OF

LABORATORY EQUIPMENTS

to

School of Biotechnology

Gautam Buddha University

GAUTAM BUDDHA UNIVERSITY

GREATER NOIDA – 201308

www.gbu.ac.in

Gautam Buddha University
(SCHOOL OF BIOTECHNOLOGY)

TENDER FOR BIOTECHNOLOGY LABORATORIES EQUIPMENTS

Tender	**Supply, installation, commissioning and trial operations of the instruments/equipment for Biotechnology Laboratories**
Opening Date:	28th October, 2010
Closing Date :	17th November, 2010 upto 3.00 p.m.
Bid Submission Date:	17th November, 2010 upto 5.00 p.m.
Technical Bid Opening Date, Time & Place:	18th November, 2010 on 3.00 p.m. at Registrar Conference Room, 1st Floor, Administrative Building.
Earnest Money Deposit:	2% of the offered cost
Completion Period:	Within 8 weeks from the date of Purchase Order issued
Bid System	Two Bid System : 1) Technical Bid and 2) Financial Bid
Technical Bid Shall Contain	i. Technical specifications of each equipment ii. All documents in support of commercial terms & conditions and eligibility criteria. iii. Bidders Proforma
Financial Bid	The Financial Bid shall contain rate schedule only. The price shall be in words as well as in numeric numbers.

"TECHNICAL BID (BIDDER'S PROFORMA)"
(To be submitted in separate envelope)

1. Name of the firm: ……
2. Date of incorporation……..
3. Name of the company – Government/Public Ltd/Private Ltd/Partnership/ Proprietorship: ……..
4. Specify the number of years in this line of activity by the company:……..
5. Sales Tax/VAT registration No. (please attach certificate) : ……
6. Experience (in year) of supplying & installation for similar laboratory equipments to IITs, NIT's or Central Universities or any Academic Institute of National Repute (please attached certificate/P.O.) : ……..
7. Turnover in the last three years (Figures should be in Indian Rupees in Lakhs; please attach the certified copies of balance sheet) : (if the figures for 09-10 are not available then they may furnish balance sheet of year 06-07)
8.

2007-08	2008-09	2009-10

9. Provide the postal address, telephone & fax numbers, and email address of the nearest service center : ……
……
10. What would be the delivery period from the date of the placement of an official purchase order : ……..
11. Enclose the list of customers to whom you have supplied /serviced during the last 3 years ending 31/03/2010 with full postal address and name of the contact person with phone, FAX numbers, and E-mail-id, billing amount etc. Certificate regarding satisfactory performance from the minimum three end users should be furnished.
12. Are you the manufacturer / authorized dealer / distributor/ reseller for the product quoted (please attached relevant certificate): ……..
13. Was there any elapse or delay in supplying the goods ordered or any service related issue during the warranty period for the products supplied by your firm to different Institutes/Universities during last three years? If yes, provide details.
14. Deviations in specifications, if yes, please mention in separate sheet.
15. Whether technical specification are attached with Technical Bid or not. Yes/No

DECLARATION

1. The rates quoted in financial bid are inclusive of all taxes, packing, handling and installation charges.
2. The information given in the financial bid by the undersigned is correct.

(SIGNATURE OF THE BIDDER)
WITH SEAL

NAME : ……

ADDRESS : ……

: ……

: ……

Tel./Mobile No. : ……

Note: The financial bid is required to be submitted separately in a sealed cover super scribing as 'Laboratory equipment for School of Biotechnology'.

Gautam Buddha University

(SCHOOL OF BIOTECHNOLOGY)

(Technical Specifications of Required Equipments)

S.N	Item	Specifications
1.	**Ultra low temperature deep freezer**	✓ Type : Upright ✓ Internal dimension : 1265h x 765w x 575d (mm) ✓ External dimension : 1940h x 1025w x 852d (mm) ✓ Capacity : 570 litre ✓ Operating temperature :Up to –86°c with 1°c increment at ambient temp upto 320C ✓ Power consumption : 565w/h or with least power consumption ✓ Electric supply : 220v/50hz, 13 amps. Single phase ✓ Fully programmable microprocessor controlled with membrane keypad and eye level control panel. ✓ System should have 304L grade stainless steel interior and tough, powder coated exterior finish constructed on steel gauge of 18g ZINTEC 1.2 mm thick. ✓ Freezer should have five insulated inner doors with 4 adjustable shelves. ✓ Freezers should have heated air vent to prevent vacuum formation and front panel air filter. ✓ Heavy duty lockable castors and lockable outer doors and lids. ✓ Freezer must have battery back-up and 4 PIN security lock for unauthorized tempering. ✓ Freezer must have RS 232 interface data logging port and it must also have on board SMART diagnostic software. ✓ Audible and visible alarms for temperature, power failure, system failure, battery low etc. ✓ Freezer must use CFC-FREE, HCFC-FREE non flammable refrigerants, and refrigeration system must be energy efficient and hermetically sealed cascade refrigeration system. Compressor should be capable to run any voltage between 190 – 270V. Freezer must have ISO 9000 safety requirements and IEC 61010 Electrical safety CE certified. ✓ Freezer must have washable condenser filter indication which should keep fins free of dust to maintain peak cooling efficiency. ✓ All vendors are requested to attach original technical literature/catalogue in support of the mentioned specifications & highlight the above features . ✓ Racks, boxes & dividers for storing samples should be supplied full capacity for the complete freezer. ✓ Heart of the machine i.e Compressor should be warranted for minimum 5 years & Freezer should be warranted for atleast 1 year from installation date. ✓ An un-interrupted power supply (UPS) is preferable suitable for running this machine for atleast 3 hours backup ✓ A suitable (minimum 5KVA) branded automated power stabilizer
2.	**Deep freezer**	✓ Adjustable temperature control ✓ CFC-free refrigerants and insulation ✓ Rugged, white acrylic exteriors ✓ Seamless, easy-to-clean interiors ✓ Foamed-in-place insulation ensures consistent performance and low operating costs ✓ Temperature Range-12° to -20°C ✓ Defrost- Manual

		✓ Refrigerant- CFC-freeElectrical Requirements 120V 60Hz ✓ Capacity 16 cu. ft. (453L) ✓ Interior D x W x H- 31 x 30 x 61 in. (79.8 x 76.2 x 154.9cm) 235 lb. (107kg) ✓ Exterior L x W x H - 22 x 25 x 51 in. (55.9 x 64.3 x 128.3cm) ✓ A suitable (minimum 5KVA) automated power stabilizer
3.	**Horizontal Sterilizer**	✓ High pressure high vacuum steam sterilizer fully automatic, sliding door single ✓ Chamber size - 600 (W) x 600 (H) x 1200 (D) mm to 1200 (W) x 1500 (H) x 2400 (D) mm ✓ Shape - Rectangular ✓ Chamber Volume- 460 to 4300 Ltrs. ✓ Working Temperature-Upto 134°C ✓ Working Pr.- 1 to 2.2 k.g./cm2 ✓ Chamber test pressure-3.5 k.g./cm2 ✓ Jacket test Pr. - 4.8 k.g./cm2, , Channel Jacket. ✓ Source of Energy- Electrically Operated/Direct Steam Operated ✓ Mounting- Floor Standing Horizontal Type ✓ Material- • Chamber : AISI 304/316/316L • Channel Jacket : Boiler Grader Steel/AISI 304/316/316L • Outer Cover / Panelling: AISI 304 • Baffle : AISI 304 • Piping : AISI 304 • Door : AISI 304/316/316L ✓ Sliding Single Door with Silicon Tubular Gasket Sealing (durable enough to with stand inside temperature & pressure as well as hydraulic test pressure) ✓ Electrically Operated Steam Generator adequate for complete sterilization cycles ✓ Water Level Indicator with water inlet & outlet valve ✓ Pressure Regulating Electric Device with spring loaded safety valve ✓ Low water protection for heaters to cut of the supply if water level falls below the minimum level. ✓ Self locking gauge glass valve to protect electric circuit in case of breakage. ✓ Piping & Fittings should be made of stainless steel and bronze, duly argon arc welded. ✓ Dial Thermometer fitted in the chamber drain line 6/10 cm diameter with ± 1.5° accuracy. ✓ Pressure gauge - 6.5 / 7.5 cm diameter industrial type mounted on the jacket. ✓ Compound Gauge- 6.5 / 7.5 cm diameter industrial type mounted on the Chamber. ✓ Manual Operational Valve- Single Port operational valve ✓ Relief safety valve for jacket ✓ Vacuum breaker in the jacket to prevent vaccumization of jacket ✓ Bacteria retentive filter to avoid contamination of environment fitted in the drying system ✓ Water-ring motorised vacuum pump, suitable for three phase electric supply. 380/50 Hz. ✓ Pre evacuation of chamber before sterilization as per norms ✓ Control Panel is made of Stainless Steel modular type panel incorporating various pressure gauges for indicate actual pressure in chamber jacket and on gasket. ✓ Control Accessories- Circuit breaker, Overload relay, Transmitter, Switches, Indicator, Push Buttons & Connectors mounted inside the control panel ✓ Process control- PLC with four line LCD or more with numeric and command key to feed alphanumeric data. ✓ User friendly Alpha-numerical / Graphical / Digital type display ✓ Display with Cycle status and Fault/Error Indication with visual alarms

		✓ Preloaded programs in the PLC with one pre vacuum pulse to purge the autoclave of all air under strict Sterilization Control cycle software program. ✓ Temperature of not less than 121°C and a pressure of 15 psi for an autoclave residence time of not less than 25 minutes for each cycle ✓ Temperature of not less than 135°C and a pressure of 31 psi for an autoclave residence time of not less than 7 minutes for each cycle. ✓ Validation test program for periodic validation.
4.	**BOD Incubator**	✓ Microprocessor controlled **170 Litre** BOD Incubator; temperature control from 4° C above ambient to 50°C, with control accuracy ±0.1°C. ✓ It should have six-sided direct heating with fanless, gentle convection circulation to provide stable temperature control, excellent uniformity and rapid recovery with no over shoot. ✓ It should come with minimum 4 adjustable height shelves & humidity reservoir (removable) to achieve at least 95% RH. ✓ It should have independent door heater eliminate condensation on inner door surface. ✓ It should have digital display for set parameters with audio visual alarm. ✓ It should have on board built-in diagnostic to help to identify system status and expedite on-site services. ✓ It should have RS232 communication port. ✓ It should have 25mm access port. ✓ It should have non-volatile memory which must guarantee data integrity regardless of length of time or frequency of power interruption. ✓ It should have following additional safety such as back-up microprocessor, separate over temperature cut-out, alarms setpoint reset automatically, password protection etc. etc. ✓ It should be ISO 9001 & CE Certification.
5.	**Floor Centrifuge**	✓ A floor model centrifuge with i) Swinging bucket rotor (Capacity - 4 x 750ml; Max speed- 4700 rpm; Max rcf - 5590 X g) and ii) Fixed angle rotors (Capacity - 8 x 50ml; Max speed- upto 15200 rpm; Max rcf -25314 X g) ✓ Control system- microprocessor ✓ Drive system- Direct, brushes induction low profile motor ✓ Rotor locking system- Auto lock III ✓ Imbalance detection system- SMARTSpin ✓ Programs- 6, direct access ✓ Temperature set range- -10°C to +40°C ✓ Pre cooling function- yes, with direct button ✓ Refrigeration system- CFC free ✓ Pulse run- Yes ✓ Acceleration rate: 9 ✓ Deceleration rate- 10 ✓ Max timer range- 9 hr, 99 min + continues ✓ Sound level(dBA) with swinging bucket rotor at top speed- <57 ✓ Other features- certified ClickSeal biocontainment system, Language slection, motorized lid latch ✓ Max power consumption 120V- 1400W, 230V- 1950W ✓ Max heat output (BTU/Hr)- 120V-4776, 230V-6653 ✓ Dimensions ✓ Height (lid open)- 90cm/34.4 in ✓ Height (lid closed)- 36cm/14.2 in ✓ Width- 74.5 cm/29.3 in ✓ Septh- 67cm/ 26.4 in ✓ Weight—116 kg

		✓ Technical standards- IEC 61010-1, IEC 61010-202, IEC 61010-2- 101;230V only: EN 292, EN 61326, EN 55011B ✓ Certification- UL listed/CSA certified/CE marked/IVD compliant/Certified biosafety Accessories: (1) Fixed-Angle Rotor with (8 x 50ml) capacity, individually sealed fixed angle. Replacement O rings, adaptors for 50ml and 15 ml conical tubes. Rotor stand, rotor cover, locking nut, vacuum grease, lubricant, rotor cover tool, instruction manual, washer for locking nut etc. (2) High versatility Swinging Bucket Rotor (4 x 750mL) capacity; max. speed: 4700rpm/, adaptors for 250ml bottles, 150ml tube, 100ml bottle, 50ml conical and round bottom tubes,15ml conical tubes, spare crimp gauge, extra plugs and caps, tube racks (two) separately; and also including Rotor stand, vacuum grease, lubricant,
6.	**Refrigerated Microcentrifuge**	✓ Compact centrifuge for speed of 15000 rpm and RCF value of 21,130Xg ✓ Temperature range: -10 degC to +40 degC. ✓ Time settings from 30s to 9:59 h. ✓ Should have air cooled chamber. ✓ Knob version for faster setting of parameters ✓ Dials and digital display for easy setting ✓ rpm/rcf setting as required ✓ separate short spin function ✓ Aerosol tight rotor 24 X 1.5/2.0 ml tubes should come as standard. ✓ Adaptors for 0.2 ml, 0.4 ml, 0.5 ml and 0.6 ml tubes as option. ✓ Motorized lid latch-automatic lid opening following application sequence. ✓ Acceleration time to max rpm of 15 sec. ✓ Braking time from max rpm of 16 sec. ✓ Brushless motor to provide maintenance free drive ✓ Rotor option for 4x PCR 8-tube strip rotor, 18 place kit rotor. ✓ Autoclavable Rotors ✓ Noise level<54 d B(A) ✓ Automatic rotor recognition ✓ Should be approved for IVD (In Vitro Diagnostics use).
7.	**StrataCooler**	✓ Capacity: 32 standard cryovials ✓ Highly controlled freezing (<0.1°C loss per minute) ✓ Weight: 1.0 kg, ✓ Dimensions (WxDxH): 12 cm x 21 cm x 8 cm ✓ Convenient, controlled freezing of mammalian and insect cells at a controlled rate of 0.4–0.6°C/minute ✓ Overall survival rates of 80-90%
8.	**Cryo storage system**	✓ Automation friendly design cryo storage system with fully loaded data tracking and scanning software ✓ Automated removal of caps using a socket controling the cap of individual tube or 96 well plates ✓ Cryobank vials should be arrayed in a micro-well format for the use of multi-channel pippetors or liquid handling robots. ✓ Vials should be locked into the rack, which ensures that they do not fall out during transport in the lab or storage. ✓ The click in the rack also retains the vial in the rack when the cap is mounted and the screwdriver is removed. ✓ The database programme should list the racks, their location in the freezers and the individual positions of the vials with a unique 2D code. ✓ Guarantee verified unique barcodes should be there on the racks and on the cryobank vials. ✓ 2D codes should be laser etched into the bottom of the vial. ✓ The 2D codes should read multiple codes at the same time using the scanner.

		✓ The scanner soft ware should read the codes and sends information about position of the different codes to the database programme. ✓ The database programme should use the location of the vials in the rack, the location of the rack in the freezer and the associated sample data to keep track of the position of every sample. ✓ Should be supplied with single 2D code scanners that is able to read the code type: datamatrix ecc200 14x14 array. ✓ CE marked ✓ Sterility assurance level 10-6 on the cryobank vials ✓ DNAse/RNAse free ✓ Non-pyrogenic (LAL-test) (only valid for cryobank vials) ✓ Non-toxic (USP class VI test) ✓ Conform to IATA requirements for the transport of specimens, UN packing instructions 602 and 650. ✓ No of racks: 3-4 ✓ No. of 1.2 and 2.0 ml vials (per racks): 125-150 ✓ Total No. of 1.2 and 2.0 ml vials: 375-450 ✓ Dewar (01) ✓ Liquid N2 capacity: 21 lit./10 lit.
9.	**CO2 Incubator**	✓ Microprocessor controlled 170 Litres/6.0 cu.ft direct heat (air-jacketed) CO2 Incubator with High Temperature Disinfection(HTD) at 120 deg C having temperature control from 4 deg. C above ambient to 50°C, with control accuracy ±0.1°C. No need to remove Infra-red (IR)CO2 sensor during HTD cycle. ✓ Six-sided direct heating with fanless, gentle convection circulation to provide stable temperature control, excellent uniformity and rapid recovery with no over shoot. ✓ CO2 control range from 0.2 to 20% with control accuracy and uniformity of ±0.1% and should have rapid recovery of at least 0.7% per minute. ✓ Infra-red (IR) CO2 sensor with programmable auto-zero function provide superior accuracy & stability. Its auto-zero function automatically adjust IR Sensor base line for optimum accuracy & operational security. No need for manual measurement or operators intervention. ✓ With minimum 4 adjustable height shelves & humidity reservoir (removable) to achieve at least 95% RH. ✓ Independent door heater eliminate condensation on inner door surface. ✓ Large 12x6.5cm easily viewable backlit display screen provide both digital and real time data graphing and status etc. ✓ On board built-in diagnostic to help to identify system status and expedite on-site services. ✓ Comprehensive two level alarm systems includes audio & screen displayed alarms for system status, with programmable alarms for CO2 and temp set points, delays, duration and more. ✓ 72 Hrs data storage facility (on board) for CO2 , temp., alarm and door openings should be automatically stored on screen display. ✓ HEPA filter on CO2 inlet. ✓ Non-volatile memory which must guarantee data integrity regardless of length of time or frequency of power interruption. ✓ Additional safety such as back-up microprocessor, separate over temperature cut-out, alarms setpoint reset automatically, password protection etc. ✓ RS-232 communication port & 25 mm Access port as standard features. ✓ Should be supplied with 2 CO2 gas cylinders & 2 regulators for proper functioning of the system. ✓ It should be ISO 9001 & CE Certified with 3 years warranty
10.	**Distillation Unit with softner**	✓ Quartz Condensor with triple distillation ✓ The boiler and condenser should be of quartz and heater should be of silica.

		✓ Conductivity of distilled water should be less than 0.8 microsiemens/cm. ✓ Hardness: < 5 ppm ✓ Distilled water pH: 5-8 ✓ Reagent Grade: 2 ✓ Output should be 2 litre/hr. ✓ The entire distillation unit should be housed in a compact cabinet with four types of safety features viz.flow control safety,gate valve,level sensor and reservoir level sensor. ✓ The distillation unit should have all electrical safety standards as per IEC 61010-1. ✓ The distillation unit should be designed for fully automatic operation when connected to a reservoir. Depending on the water in the reservoir the unit should switch on/off. ✓ The cabinet water still should be supplied with a water softner based on ion exchange technology. ✓ The softner should give soft water with less than 5 ppm as calcium carbonate hardness and should have multiport valve for easy service and regeneration. Maximum flow rate-900 litre/hr. ✓ Output of softner between regeneration-8000 litres.
11.	**Horizontal Electrophoresis Unit**	✓ Mini Horizontal electrophoresis System ✓ Should includes buffer tank ✓ a safety lid with cables ✓ UV transparent gel tray of 7x7 cm size ✓ two 1.5mm fixed height combs (8- and 15well) & ✓ Gel caster ✓ Leak Proof System
12.	**Electroporator**	✓ Choice of electrical field wave forms, square wave form for eukaryotic & prokaryotic cells & exponential wave form for prokaryotic & eukaryotic cells, in one instrument that enable optimal electroporation conditions for all kind of cells. ✓ Preset optimized protocols for common bacteria, fungi, and mammalian cells. ✓ Choice of programs for manual operation, preset protocols, user protocols, an optimization protocol, and additional advanced functions offer flexibility. ✓ Patented Pulse TracTM circuitary and arc protection to ensure reproducibility & sample protection. ✓ Should Deliver up to 3000V (Allows to transform the widest range of microorganisms) ✓ User friendly digital interface with intuitive programming controls all parameters. ✓ Storage capacity for 144 protocols. ✓ Recall of pulse parameters and results for previous 100 experiments. ✓ Modular design for value & Flexibility ✓ Outputs: Waveform Exponential decay or Square wave ✓ Voltage: 10-3,000 volts ✓ Capacitance: 10-500 V, 25-3275 uF in 25uF increments. ✓ 200-3000V, 10, 25, 50 uF. ✓ Resistance (Parallel): 50-1,000ohm in 50ohm increments, plus infinity ✓ Sample Resistance: 20ohm, minimum at 10-2500V ✓ 600ohm minimum at 2500-3,000V ✓ Square Wave Timing: 10-500V: Pulse length 0.05-10ms duration in 0.05ms increments, 10-100 ms duration in 1 ms increments, 1-10 pulses, 0.1 to 10 sec interval. 500-3,000V: Pulse length 0.05-5ms duration in 0.05 ms increments, 1-2 pulses, 5 sec minimum interval.
13.	**Upright Fluorscence Microscope With Image Analysis System**	✓ Infinity Corrected Optical System ✓ Transmitted illumination 12v-100watts or LED Illumination ✓ Trinocular tube with interpupillary adjustment 50-75mm beam splitter position observation& documentation 0/100,100/0& 50/50.The trinocular tube should

		have angel adjustment option and should be of tilting type ✓ Motorized Z Focus with minimum resolution of 15-25nm or Better with a provision to control the microscope through computer or touch key pad controller. ✓ Motorized Z Focussing should be through Nosepiece for vibration free focussing ✓ Mechanical stage with dual slide holder ✓ 8-9 position Motorized Fluorescence turret wheel to accommodate 8-10 fluorescence filters at a time and the fluorescence turret should have built-in fly eye lens to eliminate the need of centring ✓ Seven position motorized nosepiece to hold 6-7 objectives at a time ✓ Motorized Condenser should have 8-9 positions to accommodate various prisms and phase slits ✓ Objectives: Plan Flour or Neo flour objectives 4X/5X,10X,20X,40X,60X and 100X Oil ✓ DIC Prisms should be provided for 10x, 20x, 40x&100x ✓ Fluorescence attachment: 100 watts Mercury with Plan Apochromat Corrected Lamp House with high performance band pass filters DAPI, FITC/GFP, TRITC/RHODAMINE ✓ High speed fluorescence shutter should be part the system ✓ Polariser attachment should be integral part of the set-up ✓ Image analysis system: 12 bit 2/3 Inch CCD color cooled Scientific Grade CCD Camera with peltier cooling, Pixel Size 6.45X6.45Microns.The resolution of The camera should have 12 or more mega pixels .The camera should have facility to increase or decrease the sensitivity and resolution through Binning. ✓ Advance Image Analysis software: Advance Image acquisition software with interactive measurement of intensity profiles, length, area, circle, angel, counting of events. Acquisition of Z Stack, Time Lapse Imaging, Multichannel Image Acquisition for fluorescence. ✓ The microscope should be controlled through touch key pad as well as through computer ✓ Computer: Compatible Branded Computer with 4GBRam, 500GB HDD, 19 Inch TFT Monitor, UPS and color laser printer ✓ An un-interrupted power supply (UPS) suitable for running this machine for atleast 3 hours backup ✓ The entire system should be provided by one manufacturer for better compatibility and after sales service ✓ A suitable (minimum 5KVA) branded automated power stabilizer
14.	**Fraction Collector**	✓ Standard rack with 95 places for 10-18 mm test tubes ✓ Accessory racks with 175 places for 12 mm test tubes ✓ 40 places for 30 mm test tubes ✓ Program memory upto 99 programs ✓ Time mode- 0.01-9.999 min ✓ Volume mode- 0.05-9.999 ml ✓ Tube change time- 0.2-0.4 s for 12 mm rack, 0.3-0.6 s for (10-18 mm rack), 0.4-0.7 s for (30 mm rack) ✓ Having Drop synchronization, Peak memory, Event mark, Tube sensor, Monitor input, Pump control, Valve control and Remote control ✓ Programmable Delay time and Waste time ✓ Operating temperature- 4-40 °C ✓ Voltage-100-240 VAC, 50-60 Hz ✓ Max Flow Rate- 100 ml/min. ✓ pH stability range- 1 to 13, 1 to 14 (<1 day exposure) ✓ Fraction Size- 0.05-100 ml (0.001 ml increments) ✓ Environment- +4 to +40^0 C, 20-95% relative humidity ✓ 84-106 kPa (840-1060 mbar) atmospheric pressure

		✓ Safety certifications with CE 89/336/EEC (EMC directive); CE 73/23/EEC (LV directive); EN-61010-1 (IEC1010-1, UL3101-1, CSA22.2 1010-1) ✓ An un-interrupted power supply (UPS) suitable for running this machine for atleast 3 hours backup
15.	**Gel documentations system**	✓ High resolution CCD camera- 1.4 Mega pixel interline CCD ✓ Firewire connectivity- Rapid data transfer for real time imaging. ✓ 12-bit data acquisition, Quantitative, 3.0 orders of dynamic range. ✓ Resolution- 1360x1024 with 4.6x4.6 micron Pixel Size, Resolution should be 47.8 µm/pixel at max zoom ✓ Motorized Zoom Lens- C-mount lens to collect more light to hit CCD, f/1.2;Zoom 8-51mmwth numerical feedback ✓ Universal Hood should be light tight with light baffling option. Touch pad controls for iris, zoom, and focus of the lens and for on/off control of epi and transillumination ✓ Large Sample Plate- UV illumination imaging area should be 26 x 25cm. ✓ White Light Epi Illumination- For imaging of colorimetric blots and colonies. ✓ UV Transillumination - 302nm UV-B, Should be Compatible with a wide range of applications including ethidium bromide, SYBR green, SYBR gold, SYPRO orange, Fluorescein, Radiant Red, Texas Red, SYPRO Red, GelStar, CY3, Rhodamine, Hoechst, Coumarin. ✓ Filter Slider- Option for easy conversion of system set-up for either fluorescence and colorimetric samples. Three-position filter slider - two positions for emission filters (fluorescence/colorimetric samples) and one open position for chemiluminescence for future upgradation . ✓ Filters- Amber Filter with spectral range of 548-630nm for following application: EtBr, SYBR Green/GFP/SYBR Gold/Fluorescein/ CY3/Rhodamine/ SYPRO Ruby/Texas Red, Hoechst/Coumarin. ✓ UV and White Lamp Auto Shut-off to preserve lamp life, system should automatically shuts off UV and white light lamps after approximately 5 minutes. ✓ Data processor- Latest Branded data processor(PIV 256 mb RAM 40 GB HDD,17 " colour monitor Windows XP Pro) with suitable inkjet printer ✓ Software with networking capabilities and FDA 21 CFR part 11 compliance for 1 Dimensional application- Software should analyze variety of data based on application including radioactive, chemiluminescent, fluorescent,color stained sample,Automatic lane and band detection,Rapid molecular weight detection with multiple regression models,band lane matching analysis,background substraction correction of gradient gels,Accurate concentration analysis using volume tools, recall of lane and sample layouts,molecular weight determination, colony counting,array tools for slot blot,dot blot and other medium density array, Differential display option for study of Gene expression study using mRNA and PCR amplification, Ready agarose 96 plus option,3 D viewer for discriminating two nearby band or spots ,Variable number tandem repeats (VNTR) for microsattalite Study.
16.	**Glass bead sterilizer**	✓ Branded machine with cabinet Size : 150mm x 120mm x 150mm ✓ Brass Crucible Size : 55mm Dia a 120 mm depth ✓ Preset Temperature Range : 230ºC - 275ºC. ✓ Initial Stabilization Time : 20 minutes ✓ Wattage : 250W, single phase. ✓ Input : 220V, 50 Hz.
17.	**ThermoBlock**	✓ An imported/branded dry block heater for incubation of broad range of reaction tubes ✓ Temperature range- ambient +5°C to 130°C ✓ Temperature setting-15°C - 130°C ✓ Temperature stability-+/- 0.1°C (@ 37°C)

		✓ Uniformity within the block-+/- 0.1°C (@ 37°C) ✓ Uniformity across similar blocks-+/- 0.2°C (@ 37°C) ✓ Heat up time: 30°C - 37°C- approx. 2 min, then allow 3 min for stabilisation 25°C - 100°C- approx. 15 min, then allow 5 min for stabilisation 30°C - 130°C- approx. 20 min, then allow 5 min for stabilisation ✓ Capacity-2 removable aluminium blocks for test tubes or microcentrifuge tubes (Single blocks) ✓ or1 removable microtiter plate block (Combi block) ✓ Display-digital, LED ✓ Display resolution-0.1°C ✓ Control LEDs -for heater, fault Timer ✓ Timer- 1 - 9,999 min ✓ Timer signal-buzzer ✓ Additional functions-temperature deviation alarm, offset adjustment, ✓ delay start and stop, calibration ✓ Dimensions (W x D x H)-200 mm x 280 mm x 100 mm ✓ Power-220 - 240V / 50-60hz or 110 - 120V / 50-60hz 300W ✓ Overtemperature protection- Internal thermal fuse ✓ Enviroment operating range- 10°C to 35°C (80 % max. relative humidity) ✓ Block Dimensions (W x D x H)- Single block: 100 x 70 x 62.5 mm ✓ Single block 24x1.5 ml tubes and 1 block lifter ✓ Single block 30x0.5 ml tubes and 1 block lifter
18.	**Tissue Rupture system**	✓ An imported/branded handheld rotor-stator homogenizer ✓ With Rotating blades ✓ 120 V, 60 Hz with converter for Indian conditions ✓ Flexible, allow disruption of wide range of samples and formats ✓ Separate disposable probe for samples ✓ Transparent disposable probe ✓ 100 nonsterile plastic disposable probes for use with the TissueRuptor ✓ Rapid, effective disruption of a range of sample types ✓ Visual monitoring of disruption using transparent probes ✓ Seamless integration with QIAGEN sample technologies
19.	**Ice Flaking Machine**	✓ Ice production Capacity: Approx 50-150 Kgs per 24 hours ✓ Storage Bin Capacity: 15-35 Kgs ✓ Ice Bin: Ice holding tank made of stainless steel, insulated with PUF so that ice can be stored for longer period without melting. ✓ Auto Cut Off System: Auto cut off in case of water supply failure and maximum ice level. ✓ Overflow-Drain Line: Overflow and drain lines for Ice flaking machine continuous draining of water. ✓ Electrical and Safety Systems: all important components like compressors and gear box driving motor etc. Replaceable connectors for wiring approximate electrical load 1 KVA 220 Volts 50 cycles
20.	**Incubator Shaker**	✓ Stackable and inner chamber made of stainless steel with no any limitation of flask size in the stackable unit. ✓ Shaking speed- 20-500 rpm with accuracy of +/- 1 rpm and speed range must be same in the stackable units and timer range for shaking is 1 sec. to 999 Hr. ✓ Different shaking diameter (10 – 50mm) on the same platform to perform all kind of culture experiments (plant cells, microbial cells, mammalian cells and all other shear sensitive cells)

		✓ Temperature range- 150 C below ambient to 70-800 C with accuracy of +/- 10C ✓ Magnetic drive of the machine based on permanent magnets and belt less. ✓ CO2 measurement & control and humidity measurement & control as accessories. ✓ One full size Universal platform (capacity 22-24 flask of 250ml) with anti-slip mat to hold all sizes of clamps (up to 6 litters Flask). ✓ In-built over Voltage Protection and Self Monitoring System where all parameters are checked continuously and the machine is switched of automatically in case of fault. ✓ Auto stop on door opening and automatic restart on power failure ✓ Internal lighting in the chamber to view the samples and optional UV Light for sterilization of the chamber. ✓ Maximum Possible warranty for all the spare part. ✓ Accessories- 10 clamps of 100ml, 250ml and 500ml flasks each 05 clamps for 1000ml flasks ✓ A suitable branded automated power stabilizer
21.	**Inverted Microscope**	✓ Transmitted illumination 12V-100Watts halogen ✓ Condenser should be universal with Numerical aperture 0.55 or better ✓ Stage should be provided with a provision to hold Petri plates, 96Well plates, Flask ✓ Nose piece should have six positions to hold six objectives at a time ✓ Objectives: Plan Achromat 4X,Plan Flour 10X phase, Long working distance Plan flour 20X Phase, Long working distance Plan flour 40X Phase, Plan Apochromat 60X Oil ✓ Microscope frame should be rigid and should have Magnification changer of 1.6X or better ✓ Microscope should have activated Bottom Port to adapt a camera in future ✓ CCD Camera: Dedicated2/3 Inch CCD color camera with atleast 1.3-1.4 Mega pixels with a speed of about 25-40 Frames per second. The camera chip should be cooled @15 deg below the ambient conditions. The camera should have fire wire port ✓ Image analysis software: Counting, Measurement, color adjustments,reports generation facility Etc ✓ Data Workstation:4GB RAM,500GBHDD,19Inch TFT,UPS,Keyboard,Optical mouse operating software. ✓ UPS with 30 Minutes back should be provided in support to the system. An un-interrupted power supply (UPS) suitable for running this machine for atleast 3 hours backup ✓ Two numbers of Occulometer Micrometer OCM 10/100
22.	**Liquid Nitrogen storage Tank**	✓ 20 lt ✓ Low level alarm ✓ Roller base ✓ Lockable lid
23.	**Laminar Airflow** **(3 numbers of size 1; & 2 numbers of size 2)**	Size 1: (2 seater)= <u>6 feet width</u> Inches : W x D x H HEPA Filter Area : 72X 24 Bioclean Workspace : 72X 24X 24 Overall Dimensions : 78 X36X 56 Size 2: (01 seater)= <u>4 feet width</u>

		Inches : W x D x H HEPA Filter Area : 48X 24 Bioclean Workspace : 48X 24X 24 Overall Dimensions : 54 X36X 56 ✓ Separatorless Minipleat Anti-microbial UltraKlenz HEPA filters of EU 13 grade with an efficiency of 99.99% on monodisperse, 0.3 micron challenge ✓ Nouveau multi-layer biocidal MicroKlenz rehabilitatable anti-microbial EU-6 filter with efficiency to 60-80 %. Media is inherently bactericidal & fungicidal. ✓ Fluorescent lights (in excess of 200 lux) ✓ Audio-visual alarm which triggers incase blower trips, as a safety measure ✓ Pressure Monitor 0 to 25 mm to indicate differential pressure across HEPA filter with respect to ambient DOP introduction port for upstream challenge of the HEPA filter. ✓ Air/Gas cock ✓ UV light which aids in decontamination of work area. ✓ Analog hour meter to monitor usage of UV light.
24.	**Magnetic stirrer**	✓ Digital ✓ Speed control:60-1200rpm ✓ Ceramic top: 7.25 X 7.25 in (18.4 X 18.4 cm) ✓ Top plate: 120V, 50/60Hz ✓ Load capacity; 15lb (11kg) ✓ Detachable 3 wire line cord and plug ✓ PTFE stir bar ✓ Dimensions: 12 3/4L X 8 ½ W X 3 7/8H in (27.9 X 18.7 X 8.4 cm) ✓ Stirring speed adjustable in 1 rpm increments ✓ Display shows set and actual speed ✓ Programmable timer ✓ Base with support rod mount with thumbscrew for rods upto 13mm diameter. ✓ Instant ON should begin at 60rpm speed ✓ Certification: CSA approved ✓ Warranty: 1 year
25.	**Minispin**	✓ MiniSpin plus, 230 V/50-60 Hz, incl. ✓ Standard rotor, anodised aluminium, 45 deg angle, 12 bores for 1.5/2.0ml microcentrifuge tubes complete with polypropylene lid includes refined "Black Line" aluminium rotor ✓ Power requirement: 70 W ✓ Maximum Rotational Speed : 14,500rpm ✓ Relative centrifugal force (rcf): 14,000 x g ✓ Acceleration time to max. speed: Approx. < 13s ✓ Braking time from max. speed: Approx < 12s ✓ Dimensions (H x W x D) :22.5 x 24 x 12 cm ✓ Weight,incl. rotor: 4.3 Kg
26.	**Peristaltic Pump**	✓ Single-channel peristaltic pump combines reproducible flow rates with simple operation, either as a standalone unit, or interfaced with programmable fraction collectors. ✓ Remote control cable ✓ Automatic pressure plate for convenient tubing changes as well as maximum and reverse flow functions. ✓ Include all required accessories for running protein- chromatographic columns. ✓ Flow rate range (ml/min) 0.1-8 ✓ Flow rate 0.6-500 ml/h

		✓ Pressure Plate Automatic for tubing changes & reverse flow functions ✓ Operating temperature (°C) 0-40 ✓ Voltage/Frequency 110/120/220 -230/240 VAC, 50-60 Hz ✓ Safety certifications CE 89/336/EEC (EMC directive); CE 73/23/EEC (LV directive); EN-61010-1 (IEC1010-1, UL3101-1, CSA22.2 1010-1) ✓ Tubings and tubing connectors should be provided
27.	**pH meter**	✓ pH range: 0.00-14.00 ✓ Resolution and accuracy: 0.01 and ±0.01(0.01°C and ±0.3°C) ✓ mV Range: ±199.9mV; ±1999mV ✓ Resolution and accuracy: 0.1mV & ±0.2mV (within ±199.9mV); 1mV &±2 mV (beyond ±200mV) ✓ Temperature Range: 0 to 100°C ✓ Resolution and accuracy: 0.1°C and ±0.3°C ✓ No. of calibration Points: up to 5 ✓ pH buffers: USA (10.01,4.01,7.0) and NIST(4.01, 6.86,9.18) ✓ Memory:100 data ✓ Temperature compensation: Automatics/Manual (0-100°C) ✓ Recorder output: Yes ✓ Special functions: Stability indicator, Self diagnostic, Hold and pH slope/offset display ✓ Power: 9VDC, using AC adaptors 110VAC or 220VAC,50/60 Hz
28.	**Programmable Photoperiodic Controller**	✓ Real time microprocessor based. ✓ Clock Accuracy ±2.5sec/day@20ºC ✓ 1 Channel ✓ Week Program ✓ 16 memory locations adjustable to the minutes. ✓ Auto summer and winter time changing. ✓ 1500 Hrs. Running reserve. ✓ Random switching can be activated by pressing any key ✓ RED LED indication for ON operation.
29.	**Micropipettes**	✓ Each set contain one 2ul, 20ul, 200ul & 1000ul pipettes ✓ Adjustment display & opening:– Adjust your pipette to a specific liquid and volume ✓ Volume display:– 4 digits, Magnifying shape ✓ Ejector:– Very low operating force, Positioned for perfect ergonomics ✓ Control button:– Very low operating force, Colour indicates pipette volume, Positioned for perfect ergonomics ✓ Spring loaded tip cone:- Improved ergonomics, Tight fit to the tip (Not in 5 ml and 10 ml pipettes ✓ Eppendorf Perfect Piston system:- Ultra light system made of FORTRAN
30.	**Mini-Vertical electrophoresis system for proteins & Blotting apparatus**	Gel Specifications ✓ Branded, Versatile easy to use 2 mini gels to 4 mini gels simultaneously. ✓ Pre-cast gel sizes are 8.0 cm x 10.0 cm to 10.0 cm x 10.0 cm. ✓ Flexible- Capable of running hand cast as well as precast gel. ✓ Running and casting module should be different ✓ Interchangeable module- Should be upgradeable/ capable of using blotting module to do western blotting. ✓ Grounded glass plates with permanently bonded spacers & Leak proof, tape free and easy assembly ✓ It should include 1.0 mm spacers & combs & short plates extra (2 packs)

		Blotting Module- ✓ It should be compatible with small SDS page Unit. ✓ It should be capable of doing the western blotting of the mini gels. ✓ It can run 2 blots simultaneously Power Supply: Power Pac Universal • 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 10-400 V in 1V increments, 0.01-2.5 A in I m A steps, 1-500 W in 1 Watt steps • Constant voltage, current or Power with Automatic crossover • Memory storage: 9 programs , 9 steps, Timer Control : 99 hr, 59 min • At least 4 recessed sets in parallel • Automatic Power up after Power failure, Safety features: No-load detection; • Apparatus dimensions (W x L x H): 27.0 x 25.0 x 9.8 cm ✓ Sudden load change detection ✓ Installation and training to the user to be provided by the vendor.
31.	**Protein purification system**	✓ Consists of a special membrane pump with valve and mixer for gradient formation. ✓ UV-Monitor with 280+/254nm and 2 mm flow cell conductivity monitor and ph-Monitor (with optional pH-Electrode) temperature compensation. ✓ Motor Valves: 8-port buffer selection valve and injection valve with Luer port and sample loops 100µl, 500µl and 2 ml. ✓ Fraction collector with built-in peak detector tray for 95 test tubes (18mm) and flow diversion valve built-in controller with alpha-numeric display splash proved keypad, last-run storage Up to 40 programs can be stored. ✓ Flow rate: 0.1 - 50 ml/min (in 0.1ml steps) ✓ Pressure Range: 0 - 10 bar (145 psi) ✓ Programmable max. Pressure limit ✓ Conductivity Range: 1uS/cm - 999.9 mS/cm pH- range: 1 -14 (+/- 0,1 pH unit) Fluidics path compatible for aqueous buffer incl. ✓ Mixer chamber 2ml, RS232 Interface2 x short column holder, spare tubing fittings, adaptors 1/16" - M6, stop plugs, etc. ✓ Solvent: All aqueous buffers commonly used in chromatography of bio-molecules. ✓ Tube capacity: 95 in Tube Rack 18 mm (supplied), 175 in Tube Rack 12 mm (optional), 40 in Tube Rack 30 mm (optional) ✓ Ambient temperature: +4 to +40 °C ✓ Relative humidity: 10–95% ✓ Atmospheric pressure: 84–106 kPa (840–1060 mbar) ✓ Installation and training to the user to be provided by the vendor. ✓ An un-interrupted power supply (UPS) suitable for running this machine for atleast 3 hours backup ✓ A suitable branded automated power stabilizer
32.	**Refrigerator**	✓ 240 Ltr, Double door, ✓ Tuff shelves, ✓ Door cooling with air curtain, ✓ dry ice tray with ice bank,

		✓ freezer knob air control, ✓ Inbuilt stabilizer
33.	**Nanodrop Spectrophotometer System**	✓ Long path length of 1mm ✓ Short path length of 0.05mm ✓ Should be free from any consumable: Absolutely no Cuvettes or Capillaries or TIPS or Plates or Membrane format ✓ Sample volume ~ 1ul ✓ Detector: 2048-element linear silicon CCD array ✓ Absorbance Accuracy: 2% (at 0.76 absorbance at 257 nm) ✓ Sample Pedestal Material of Construction: 303 Stainless Steel & Quartz Fiber ✓ Absorbance Range: 0.02-300 (10mm equivalent absorbance) ✓ Wavelength Range: 190-840 nm ✓ Light Source: pulsed Xenon flash lamp ✓ Measurement Cycle not more than 10 seconds ✓ 100% sample recovery with no contamination. ✓ Detection limit: Upper limit - ds DNA 15000ng/µl ✓ Lower limit - ds DNA 2ng/µl ✓ Hard Ware and software for data acquisition and analysis for Nucleic Acids: ds DNA, ssDNA, RNA, Protein: Bradford, Lowry, BCA, BSA, IgG, Lysozyme, Cell Culture, General Uv/Vis ✓ Software tool: System diagnostic tool. ✓ Instruments are approved to CE and UL/CSA standards.
34.	**UV-Vis Spectrophotometer**	✓ Double beam with solid state detectors and fully controlled external PC using Windows based software ✓ Operative range between 190-1100nm with full PC controlled and software operating under windows environment ✓ Variable bandwith with finest resolution with 0.5nm. and maximum up to 4nm ✓ Source with Deuterium and Tungsten lamp with selectable switching facility. ✓ Absorbance range up to 3Abs ✓ Stray Radiation should be 0.1%T at 220, 340, 370nm. ✓ Wavelength accuracy of instrument should be ± 0.1nm at D2 p, 656.1nm. ✓ Stability should be 0.00015Abs per hour. ✓ Baseline Flatness of the instrument should be 0.001A. ✓ Noise Level should be 0.00008 A or better. ✓ Wavelength programming with more than 10 wavelengths and should get selected during single spectral run. ✓ Should have an up-gradability to convert for bio-chemical applications such as protein ratio, peptide mapping, DNA melting study, water analysis for positive as well as negative ions. ✓ Computer: Compatible Branded Computer with atleast 4GBRam, 500GB HDD, 19 Inch TFT Monitor, and color deskjet printer ✓ An un-interrupted power supply (UPS) suitable for running this machine for atleast 3 hours backup ✓ Required stabilizer should be provided. ✓ 10mm quartz cell for routine and micro sampling with Holmium oxide filter ✓ Calibrated sets of reference materials for system calibration and maintenance following GLP recommendations. ✓ Instrument certificate with the system Summarizing the tests for Quality Assurance. ✓ A suitable branded automated power stabilizer ✓ 0.5 and 1.0 ml volume cuvettes (Two cuvettes for each volume) ✓ Routine peltier temperature control system accessory for sample and reference positions with selectable temperature range (0-100°C) to be included.

		✓ Should be ISO-9001 Certified Company.
35.	**Microclimatic Temperature Controller**	✓ Thermal safety for culture attrition. ✓ Real time microprocessor based user programmable Controller. ✓ 4 digit LED display for displaying measured values and Feather touch operation. ✓ Platinum sensor probe Pt- 100 (class A, SI sensor, cable 5 m, max var 0.20 C, resistance standard 100 ohms, self heating error in 0 c/mW. 0.6 in flowing air V-1 m/s and o.24 in still air, Response time in moving air 50 % response in 6 sec. And 80 % response in 5 sec ✓ Sensor failure indication ✓ Display resolution 0.1C.Accuracy > 0.1 degree C. ✓ Automatic hysteresis control. ✓ 4 Independent powered out put. ✓ One Light, One Heater and Two Air conditioners auto selectable. ✓ Input- 200-240 VAC, 50 Hz. Single phase. , Ambient 5-50 C, RH upto 90%.
36.	**Tissue Culture Rack**	✓ Height 7'1", Length 4'2" and width 18" ✓ Shelves – 6, Shelf surface – 3mm thick white hylem/Citylam Bakelite sheet in Each shelf. ✓ Lighting facility – 5 Shelves. ✓ Shelf to Shelf Distance – 16", Each Shelf – 50" x 18". ✓ Frame – 2.5 cm x 2.5 cm sq. CRC pipe of mild steel, with anticorrosive humidity resistant treatment and Structured Powder Coating. ✓ Fluorescent Light – 15 x 40W tube lights with individual ON / OFF switch providing light intensity of 380nm – 780nm wave length fitted ✓ With ERTL tested report for electronic solid state ballast for use upto 300V. ✓ Castor – 4 nos. ✓ Trolley can be connected directly to the Photoperiodic system output. ✓ Perforated Aluminium trays with each shelf will also be quoted separately.
37.	**Transilluminator**	✓ An imported/branded UVstar transillumination technology for brilliant sample visualization ✓ 20 cm x 20 cm UV filter size and 20 cm x 20 cm white light filter size ✓ UV protection shield ✓ With 50 %/100 % or 10 - 100 % intensity switch ✓ Super Brilliant high-grade filter glass ✓ Choice of 3 wavelengths: 254 nm, 312 nm, 365 nm ✓ 8 x 8 W UV bulbs (312 nm) ✓ Built-in diffuser and reflector ✓ Temperature-controlled ventilation: ✓ Electronic high frequency operating system ✓ Flicker free illumination
38.	**Stirred cell Unit**	✓ Cap and tube fitting assembly: Nylon ✓ Cylinder and membrane holder: Polysulfone ✓ Stirring assembly: Acetal, polysulfone ✓ O-rings: Silicone rubber ✓ Pressure tube: Polyethelene ✓ Filtrate tube: Tygon tubing ✓ Retaining stand: Anodized aluminum or nylon ✓ Max. Process Volume : 50 ml ✓ Min. Process Volume: 2.5ml ✓ Hold-up Volume: 0.5ml ✓ Filtration under N2 gas pressure ✓ Fully Autoclavable ✓ Capable of rapid concentration or salt removal followed by concentration in same unit ✓ Gentle magnetic stirring

		✓ 1 pack of membranes (1kDa) ✓ Spare O rings ✓ 02 units of filled nitrogen gas cylinders to be used for ultrafilteration also should be quoted: • Capacity approx 50 Lit. • regulator and spanners for operation
39.	**UV Vis Elisa Plate Reader**	✓ EnSpire (Quad Monochromator) FL, Abs, Lum, ✓ Having Fluorescence Intensity ✓ Light Source- Xenon Flash Tube ✓ Wavelength Selection Double excitation and double emission monochromator scanning in 0.1nm increments ✓ Wavelength Range ✓ Excitation-230-1000nm ✓ Emission-230-850nm ✓ Excitation/emission bandwidth- Both 5 nm ✓ Sensitivity Top Monochromators Filters/mirrors- 1fmol/well top/ 5fmol/well bottom ✓ Dynamic Range- 6 decades ✓ Filters- 3 Cut of filters are used ✓ Plate Type- 1-384 well ✓ Must have AlphaScreen/ AlphaLISA ✓ Light Source Diode Laser ✓ Detection Dedicated PMT and optical module ✓ Should have Luminescence with dedicated PMT ✓ Wavelength Range- 230-850nm scanning as well as detection ✓ Dynamic Range - 7 decades ✓ Sensitivity (ATP) - 15amol/well glow, can go upto 5amol/well, dedicated PMT ✓ Plate Type - 1-384 well ✓ Should have Absorbance ✓ Light Source- Xenon Flash Tube ✓ Wavelength Range- 230-1100nm ✓ Wavelength Selection- Quad Monochromator ✓ Bandwidth- 5 nm ✓ Measurement Range 0-4 (96) 0-4 (384) ✓ OD Accuracy <2% @ 2 OD ✓ OD Precision <0.1% ✓ Plate Type- 1-384 well ✓ Microplate Types- 1-384 well ✓ Measurement speed- Abs: 22 sec (6s on the fly), Fl 38 sec, & LOum 43 sec (96 well) ✓ Spectral scanning speed- 0.1 nm step ✓ Shaking with speed, duration & amplitude selectable, linear, orbital & double orbital ✓ Should have Barcode reader from all four sides ✓ Dimensions- H: 420mm, W:500mm, D: 508mm ✓ Temperature control from ambient +3 °C up to 65 °C, Condensation prevention, should be read with lid ✓ Software for data acquisition and analysis: curve fit (lin-reg, spline, 4PL/5PL), background subtraction,ratio calculation, IC50 calculation, Average, CV%, and Z'-value, and more, Enhanced security (21 CFR optional) ✓ Computer: Compatible Branded Computer with atleast 4GBRam, 500GB HDD, 19

		Inch TFT Monitor, UPS and color laser printer ✓ An un-interrupted power supply (UPS) suitable for running this machine for atleast 3 hours backup
40.	**Vacuum Pump**	✓ Vacuum Pump Oil free Neoprene diaphragm based. ✓ Teflon coated head, portable, AC- powered source of vacuum or pressure with regulator to regulate vacuum and pressure. ✓ Should have Vacuum and pressure gauge to see vacuum and pressure. ✓ The motor is permanently lubricated and is protected by thermal overload switch with automatic zero reset. ✓ Vacuum level of 585mm/23" Hg .
41.	**Vortex**	✓ Digital ✓ 230V, 50/60Hz, 75W ✓ Dimensions: 17.3 X 12.2 X 12.2 cm ✓ Weight: 5 kg ✓ Suitable for flasks, beakers, tubes and microwell plates ✓ Durable, rugged ✓ Speed: 500-3000rpm ✓ 3-way power switch ✓ Continuous or touch mode ✓ Supplied with cup head and 3" head cover ✓ Include holder for 12 X 1.5/2.0 ml microtubes.
42.	**Humidity Controlled Incubator Shaker**	✓ Humidity control Incubator including the shaker for Incubation of well plates, petri dishes, Stationary culture and with the shaking culture. ✓ It should be made of stainless steel. ✓ Machine must have humidity control with following features- • Maximum Humidity: 85% r.h. with setting digital 1% r.h. • Accuracy: +/-2% r.h. • Water refill : Automatic • Water heater : not less then 180 W • Door heater : not less then 90 W ✓ Shaking speed- 20-500 rpm with accuracy of +/- 1 rpm and speed range must be same in the stackable units and timer range for shaking is 1 sec. to 999 Hr. ✓ Different shaking diameter (10 – 50mm) on the same platform to perform all kind of culture experiments (plant cells, microbial cells, mammalian cells and all other shear sensitive cells) ✓ Temperature range- 150 C below ambient to 70-800 C with accuracy of +/- 10C ✓ Magnetic drive of the machine must be based on permanent magnets and it should be belt less. ✓ CO2 measurement & control and humidity measurement & control should be coated under optional accessories. ✓ One full size Universal platform (capacity 22-24 flask of 250ml) with anti-slip mat to hold all sizes of clamps (up to 6 litters Flask). ✓ In-built over Voltage Protection and Self Monitoring System where all parameters are checked continuously and the machine is switched of automatically in case of fault. ✓ Auto stop on door opening and automatic restart on power failure, internal lighting in the chamber to view the samples and optional UV Light for sterilization of the chamber. ✓ GLP Software for programming, calibration for different parameters and it should also record the deviation of all the parameters. ✓ Quotation should be supported with original catalogue and international quality control certification. ✓ Accessories- 10 clamps of 100ml, 250ml and 500ml flasks each ✓ 05 clamps for 1000ml flasks .

		✓ Trays for Micro titer and deep well plate must be quoted in optional accessories. ✓ Maximum Possible warranty for all the spare part
43.	**Water bath**	✓ Digital ✓ Temperature: ambient up to +100°C ✓ Temperature accuracy ±0.5°C ✓ Bath Capacity: 20L ✓ Overall Dimensions (L x W x H): 34.5 x 55 x 29 cm ✓ Working Volume (L x W x H): 30 x 32 x 14 cm ✓ Weight: 11kg ✓ Power Suply 220/240 V, 50/60 Hz ✓ Warranty: 1year
44.	**Water Purification system**	✓ With Prefilter unit ✓ A Prefilteration unit with 5 & 1micron filter to remove the particulate matter & booster pump for feed pressure should be provided. ✓ Ist stage system ✓ RO grade water system with following purification stages: ✓ Prefilter with antiscaling & activated carbon for the removal of free chlorine & organics. ✓ Reverse osmosis for removal of ionic & inorganic impurities. ✓ Conductivity cell present before RO stage (cell constant 0.01/cm) to measure the RO feed conductivity. ✓ Self regenerating Electro deionisation principle with Carbon beads on cathode for less recurring cost & consistent water quality. ✓ Feed water handling of conductivity upto 2000 microS/cm, Free chlorine upto 3 ppm. ✓ Water quality: Flow rate: 3 L/hr, Ions organics removal upto 99%, Resistivity: 5 Mohm.cm, TOC < 30 ppb. ✓ Reservoir ✓ Reservoir of 50 liter capacity. ✓ IInd stage system ✓ Ultrapure water machine producing water of Resistivity: 18.2 MOhm.cm, Conductivity: 0.055uS/cm, Endo toxins< 0.001 Eu/ml, Bacteria: < 0.1cfu/ml, Flow rate: upto 2 liters/min, TOC: 1- 5 ppb. ✓ Automatic recirculation feature. ✓ A suitable branded automated power stabilizer ✓ Point of use dispenser gun to avoid water spillage.
45.	**Compact Autoclavable Benchtop Fermentor**	✓ The fermenter should be designed for microbial cell culture for batch, fed batch and continuous operation. ✓ The fermenter should have facility for interchangeable vessels of different sizes ✓ All wet parts in contact with fermentation broth/reagents/feed etc. should be compatible to USP/FDA guidelines & cGMP-complaint. ✓ Single touch screen controller capable of controlling 1-4 vessels simultaneously or individually. ✓ System with built in 7 analog input/output to connect external devices. ✓ Operating condition: 220 – 240 V, 50 Hz, Single Phase a) Vessel: ✓ Either SS 316Lvessel or a vessel with lower part SS316L and upper part made of borosilicate glass. The vessel should have ports for sparger, harvest tube, aseptic

		sample assembly, DO electrode, acid and base addition port, stainless steel exhaust gas condenser, foam level detector, antifoam addition port, substrate addition ports, broth withdrawal and some spare ports for other uses. ✓ Capacity: 7.5 Litre (all Stainless Steel parts must be of 316 L grade) with working volume of 2.0 L – 5.5 L. b) Agitator: ✓ Drive: Top driven system with Permanent magnet motor. ✓ Range: At least 50-1200 rpm, with accuracy of ±2 rpm. ✓ Control: PID ✓ Sensor: Tachometer ✓ Indication: LCD c) Impellers: ✓ 2 Rushton type impellers. d) Aeration Control: ✓ Thermal Mass Flow Controller(TMFC) with four gas control(4 solenoid valves) should have suitable SS exhaust condenser along with suitable exhaust air filter assembly. e) Temperature Probe: ✓ Sensor: RTD/ Pt 100 ✓ Range: At least 5°C above cooling water temperature up to 80° C with an accuracy of ±0.1°C ✓ The temperature control system should be designed for rapid temperature shift (for induction). f) pH Probe: ✓ Working pH range: 2-14 ✓ Control: PID, with facility for dead band and control by addition of acid and base. ✓ Indication: Digital display ✓ Probe: pH probe with plug and cable. g) Dissolved Oxygen(DO)Probe: ✓ Fast response Dissolved Oxygen probe with cable. ✓ Control: 4 stage PID Cascade control function with any one and any combination (simultaneously) of four parameters (stirrer speed, aeration rate, gas mix and substrate feed) ✓ Capable of controlling DO in a range of 0-200% saturation (accuracy: ± 5% of set point). ✓ Oxygen transfer rate at least 350mM oxygen/L/hr h) Foam Control: ✓ Foam probe with cable

		i) Pumps: ✓ Minimum 3 nos. of peristaltic pumps (Built-in). j) Hardware and software for data logging and fermentation process control: ✓ Windows based Supervisory Control and Data Acquisition (SCADA) software for monitoring and control of various parameters. It should have capability to control at least 4 fermenters. Must have facilities for process validation, batch management features, multi-parameter display on monitor, time based programming of set points, ability to set both high and low limits and alarms, graphic/plotting, off-line data integration etc. and batch reports. k) Essential Utilities required: A suitable autoclave, chiller, air compressor & branded PC/Laptop. ✓ Computer: Compatible Branded Computer with 4GBRam, 500GB HDD, 19 Inch TFT Monitor, UPS and color laser printer ✓ An un-interrupted power supply (UPS) suitable for running this machine for atleast 3 hours backup ✓ A suitable (minimum 5KVA) branded automated power stabilizer
46.	**Ultrasonic processor**	✓ 500 Watt Ultrasonic Processor – 250 microliters to 1 liter: a) Power supply: ✓ Net power output: VC 505 - 500 Watts. Frequency: 20 kHz ✓ Remote actuation compatible ✓ Dimensions: (H x W x D) 91⁄4" x 71⁄2" x 131⁄2" (235 x 190 x 340 mm) ✓ Weight: 15 lbs. (6.8 kg) b) Sealed converter: ✓ Model CV 33. Piezoelectric lead zirconate titanate crystals (PZT) ✓ Diameter: 21⁄2" (63.5 mm) ✓ Length: 71⁄4" (183 mm) ✓ Weight: 2 lbs. (900 g) ✓ Cable length: 6' (1.8 m) c) Standard probe: ✓ Solid probes with non-replaceable tip ✓ Processing capability: 250 microliters to 1 liter. d) Temperature probe ✓ Allows sample temperature to be monitored up to 100°C.
47.	**Forced Air Oven**	✓ Microprocessor controlled ✓ Digital electronic timer with a range of 1 minute to 99 hours/59 minutes timer function

		✓ Timer and temperature parameters should be displayed in large LED for fast and easy readout ✓ Capacity - 230L ✓ Temperature Range- ambient+5ºC to 300ºC ✓ Temperature Set Division - ±0.5ºC ✓ Temperature Uniformity- ±1ºC ✓ Timer (hour) 0-99.59 ✓ Platform -2 ✓ Max.Platform- 4 ✓ Chamber Size (mm)- 520x550x800 ✓ External Size (mm) -710x680x1180 ✓ Weight (Kg) 104 ✓ Approval CE, ISO
48.	**Semi Microbalance**	✓ Readability: 0.01/0.1mg ✓ Capacity: 60/220gm ✓ repeatability: 0.02/0.1mg ✓ Linearity: 0.03/0.2mg ✓ Response time: 12/3 s ✓ Pan size: 80mm ✓ Calibration: automatic/internal
49.	**Precision balance**	✓ Readability: 0.001gm ✓ Capacity: 200gm ✓ repeatability: 0.001gm ✓ Linearity: 0.002gm ✓ Response time: 1.5 s ✓ Pan size: 114mm ✓ Calibration: automatic/internal

GENERAL TERMS AND CONDITIONS

1. Detailed information about equipments, specifications are available in tender document which can be downloaded from the University website www.gbu.ac.in.
2. Offer should be submitted in two parts, in two separate envelops; 1**) Technical Bid** and **2) Financial Bid**. These two envelops shall be sealed in a common cover and addressed/sent to **The Registrar, Gautam Buddha University, Greater Noida, Gautam Budh Nagar -201308 (U.P.**) super scribing "**Tender against Tender Notification Advt.:GBU/S&P/1/2010, Name of supply: Biotechnology Laboratories Equipments**" so as to reach us on or before last day of submission.
3. The Technical Bid and Financial Bid should be duly filled up.
4. The technical bid of the bidders will be opened first and the financial bid will be opened only of technically qualified.
5. The "**Technical Bid"** shall contain all documents in support of offered equipment specifications, commercial terms & conditions and eligibility criteria along with the page number for cited specifications in the company brochure for the particular item.
6. The **"Financial Bid"** shall contain rate schedule only. The price shall be in words and numeric numbers both.
7. **Eligibility Criteria**: All the participating suppliers/firms or principal manufacturer-should meet the following qualifying criteria. The firm should be a registered supplier for such supplies. Following documents are required to be submitted with Technical Bid, to qualify eligibility criteria:
    (a) Sales Tax/VAT registration certificate.
    (b) PAN and TIN number should be mentioned.
    (c) The firm should have experience of supplying & installation for similar laboratory equipments to institute of National repute such as IIT, AIIMS, CSIR labs etc. The company should also furnish a list of clients of last 5 years.
    (d) The firm should have minimum average annual turn-over of **Rs. 2.0 Crores** for previous *three* financial years. Audited balance sheet for previous *three* financial years should be submitted.
    (e) Name of branch offices & service centers after sales arrangements.
    (f) Earnest Money Deposit (EMD) **as 2% of the offered cost** and the **cost of the tender** (separately) are required to be submitted in the form of DD/Banker's cheque only, drawn in favour of "Finance Officer, Gautam Buddha University" payable at "Greater Noida" along with the Technical Bid, failing which the bid will not be entertained.
    (g) Authorized signatory should sign on all pages. Bids without authorized signature will be rejected.
8. Offer should be sent in a sealed envelope, submitted either in person or by post on which name and address of the supplier/firm shall be written. Tenders received through E-mails or FAX will not be considered.
9. The technical bids will be opened on scheduled date and time in the presence of the vendors present with authorization letter from the respective companies/firms. Suppliers intending to attend the tender opening should intimate in advance.
10. The rate quoted should be F.O.R. Gautam Buddha University (Gautam Budh Nagar, UP) in rupees inclusive of all charges e.g. packing, forwarding local taxes, railway freight, transit insurance, for outside firms and free delivery at University stores in the case of local firms. The total price should include all accessories (s) required for final installation of the equipment.
11. The equipment should have USEPA/International/National validation certificates, wherever applicable.
12. The cost of the tender is Rs.1000/- (Rupees One Thousand) inclusive of taxes (Nonrefundable) and it shall be paid separately in the form of DD/Banker's Cheque only drawn in favour of "Finance Officer, Gautam Buddha University" payable at "Greater Noida".

13. The bidder must be either sole manufacturer of the instruments /equipment or the authorized agent/representative of the manufacturer. In the case of agent/representative, certified copy of the agency/authorization issued by the manufacturer should be enclosed with the tender.
14. The EMD of the successful bidder will be refunded **two** month after completion of the supply and installation of the equipment to the satisfaction of the Gautam Buddha University. If supply is not made within the prescribed period EMD would be forfeited. The EMD of the unsuccessful bidders will be returned to the concerned immediately after finalization of the tenders. No interest will be paid on EMD in any case.
15. Tenders should preferably be given only for those articles which are available ex-stock. Other items should be quoted separately giving the delivery period. Rates of imported goods should be quoted excluding custom duty, as this University is exempted from payment of custom duty (by letter of Department of Scientific and Industrial Research, Ministry of Science & Technology, GOI).
16. Detailed specifications and "Make" of each item should be clearly given supported by the illustrated pamphlets wherever possible. Quotations without specifying the make and other particulars may be rejected. The payment will be made after the goods have been received, opened, checked and found to be in order up to our entire satisfaction. The accessories included in the equipment should also be clearly mentioned.
17. Losses or damage in transit will be in to the account of the Supplier. The supplier may, if he so desires, get the goods insured and include such charges in the tendered rate.
18. Offered rates should be valid at least for two months from the last date of receipt of tenders.
19. All legal proceedings, if necessity arises to the University may be any of the parties (University or Contractor/Supplier) shall have to be lodged in the courts situated at Gautam Budh Nagar and not elsewhere.
20. (a) The equipment delivery time should be preferably within 4-6 week after the date of issuance of the purchase order. If the delivery time is quoted more than 4-6 weeks, GBU reserves all rights to permit the bidder to compete.

    (b) The Penalty Clause is as under :-

    Should the bidder fail to deliver the goods within the period specified in the Tender**,** the Competent Authority may, at his discretion, allow an extension in time subject to recovery from the bidder as agreed liquidated damages, and not by way of penalty, a sum equal to the percentage of the value of tender amount which the bidder has failed to supply for period of delay as stated below :-

i. Delay up to one week	1%
ii. Delay exceeding one week but not exceeding two weeks	2%
iii. Delay exceeding two weeks but not exceeding one month	5%
iv. Delay exceeding one month	5% for each month and part there of subject to maximum 10%

    (c)In case of failure to supply the goods within the prescribed time and in accordance with the specifications give in the Quotations, the University shall be free to cancel the order.

21. The University's term for payment is 90% against delivery of items in good condition and satisfactory installation; and balanced 10% payment shall be made after 60 days of satisfactory working of the items. For this, the firm has to raise bill/letter for balance payment.

22. The price quoted should be in Indian Rupees. 100% payment will be made only after installation and commissioning. No advance payment will be made.
23. No revision of price bid will be allowed once the price bids are opened.
24. No increase in price will be allowed after our purchase order(s) are placed.
25. The warranty period should be clearly mentioned .The maintenance charges (AMC), if applicable, under different schemes after the expiry of the warranty should also be mentioned in a separate sheet.
26. A warranty certificate against all the manufacturing defects covering for a period of minimum one year from the date of installation shall be given at the time of supply of the equipment. Any additional period towards warrantee will be given weightage in evaluation of the bids.
27. Inspection certificates of the instruments/ equipment inspected by the qualified engineer of the manufacturer and packed in accordance with the terms and conditions of this order must be enclosed.
28. During the warranty period or later whenever the firm is called upon to attend to the rectification of the defects/faults in the consignments, the firm shall attend to the repair work within a period of a week. They should render timely back up service whenever called upon. A certificate to the effect should be attached to the tender.
29. A certificate to the effect that instruments/equipment supplied is fully operational and no additional accessory or space is required to make the instruments/equipment run should be issued alongwith the delivery challans/invoice. GBU reserves the right to refuse payment in the event of not furnishing this certificate at the time of supply.
30. Complete user, technical and service documentation and spare parts catalogue are to be provided along with the supply of the item.
31. Failure to comply with all the terms and conditions mentioned herein would result in the tender being summarily rejected.
32. Vendors are informed that once the companies are shortlisted based on the eligibility criteria and technical specification, only then the financial bids of the firms that meet the eligibility criteria, technical specification / requirements would be opened.
33. Conditional tenders will not be accepted.
34. Any cutting and overwriting in the financial bid will not be accepted.
35. GBU reserves the right to change the order quantity or split the orders among multiple vendors without assigning any reason (s) whatsoever.
36. GBU reserves the right to reject any or all the tenders without assigning any reasons whatsoever.

Registrar
Gautam Buddha University

ACCEPTANCE

We accept the above terms and conditions and shall comply with them strictly.

SIGNATURE OF THE AUTHORISED SIGNATORY : …….
NAME OF THE SUPPLIER : …….
ADDRESS : …….
…….
…….

FINANCIAL BID
FOR BIOTECHNOLOGY LABORATORIES EQUIPMENTS

S.N	Item	Qty.	Unit price (Rs.)	Total amount	
				In Rs.	In words
1.	Ultra low temperature deep freezer	01			
2.	Deep freezer	01			
3.	Horizontal Sterilizer	01			
4.	BOD Incubator	01			
5.	Floor Ultracentrifuge	02			
6.	Refrigerated Microcentrifuge	04			
7.	StrataCooler	03			
8.	Cryo storage system	01			
9.	CO2 Incubator	01			
10.	Distillation Unit with softner	01			
11.	Horizontal Electrophoresis Unit	02			
12.	Electroporator	01			
13.	Upright Fluorescence Microscope With Image Analysis System	01			
14.	Fraction Collector (for column chromatography)	02			
15.	Gel documentations system	01			
16.	Glass bead sterilizer	04			
17.	ThermoBlock	01			
18.	Tissue Rupture system	01			
19.	Ice Flaking Machine	01			
20.	Incubator Shaker	01			

21.	Inverted Microscope	01			
22.	Liquid Nitrogen storage Tank	01			
23.	Laminar Airflow (3 numbers of size 1; & 2 numbers of size 2)	3+2			
24.	Magnetic stirrer	08			
25.	Minispin	08			
26.	Peristaltic Pump	02			
27.	pH meter	04			
28.	Programmable Photoperiodic Controller	02			
29.	Micropipettes	03 sets			
30.	Mini-Vertical electrophoresis system for proteins & Blotting apparatus	02			
31.	Protein purification system	02			
32.	Refrigerator	03			
33.	Nanodrop Spectrophotometer System	01			
34.	UV-Vis Spectrophotometer	03			
35.	Microclimatic Temperature Controller	02			
36.	Tissue Culture Rack	10			
37.	Transilluminator	01			
38.	Stirred cell (Ultra filtration unit)	02			
39.	UV Vis Elisa Plate Reader	01			
40.	Vacuum Pump	02			
41.	Vortex	04			
42.	Humidity Controlled Incubator Shaker	02			

43.	Water bath	02			
44.	Water Purification system	01			
45.	Compact Autoclavable Benchtop Fermentor	01			
46.	Ultrasonic processor	01			
47.	Forced Air Oven	02			
48.	Semi Microbalance	02			
49.	Precision balance	03			

Total cost of the offer is Rs._____ in words (Rupees _____

_____. I abide by all the terms & conditions of the tender.

SIGNATURE OF THE AUTHORISED SIGNATORY : _____

NAME OF THE SUPPLIER : _____

ADDRESS : _____

_____

(Note: Please mention any variation in price of any item in case of bulk quantity)