Gautam Buddha University

Greater Noida – 201 310

Website : www.gbu.ac.in

BID FORM

FOR THE SUPPLY / INSTALATION OF LABORATORY EQUIPMENTS

OF

SCHOOL OF BIOTECHNOLOGY

Gautam Buddha University
Greater Noida – 201 310

TENDER FOR SUPPLY/INSTALLATION OF LABORATORY EQUIPMENTS OF SCHOOL OF BIOTECHNOLOGY

Tender	**SUPPLY/INSTALLATION OF LABORATORY EQUIPMENTS FOR SCHOOL OF BIOTECHNOLOGY**
Opening Date	31st May 2011
Closing Date	29th June 2011 upto 3.00 p.m.
Last date of Bid Submission	29th June 2011 upto 5.00 p.m.
Technical Bid Opening Date, Time & Place	30th June 2011 at 3.00 p.m. Venue : Conference Room of the Registrar Office, 1st Floor, Administrative Building, G.B.U., Gr. Noida.
Earnest Money Deposit	2% of the offered cost
Completion Period	Within 6-8 weeks from the date of Purchase Order issued
Bid System	Two Tier : 1) Technical Bid 2) Financial Bid
Technical Bid Shall Contain	i. Technical specifications of each equipment quoted ii. All documents in support of commercial terms & conditions and eligibility criteria. iii. Bidders Proforma iv. EMD & Tender Fee demand drafts / pay orders.
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 software 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 financial years (Figures should be in Indian Rupees in Lakhs; please attach the certified copies of balance sheet with trading, profit & loss account) : (if the figures for 10-11 are not available then they may furnish balance sheet of year 07-08)

2008-09	2009-10	2010-11

8. Provide the postal address, telephone & fax numbers, and email address of the nearest service center : ……
   ……..
9. Mention delivery period from the date of the placement of an official purchase order : ……..
10. Enclose the list of customers to whom you have supplied /serviced during the last 3 years ending 31/03/2011 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.
11. Are you the manufacturer / authorized dealer / distributor/ reseller for the product quoted (please attached relevant certificate): ……..
12. Was there any lapse 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.
13. Deviations in specifications, if yes, please mention in separate sheet.
14. 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 'Supply/Installation of Laboratory Equipments for School of Biotechnology".

Annexure : 'A'

Gautam Buddha University

School of Biotechnology

TECHNICAL SPECIFICATIONS

S.N	Item	Specifications
1.	**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
2.	**Liquid Nitrogen storage Tank**	✓ 20 lt ✓ Roller base ✓ Lockable lid
3.	**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.
4.	**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} 0.20^{0} 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^{0}-50^{0}C, RH upto 90%.
5.	**Vortex**	✓ Digital ✓ 230V, 50/60Hz, 75W ✓ Dimensions: 17.3 X 12.2 X 12.2 cm (approx.) ✓ 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 30 X 1.5/2.0 ml microtubes.
6.	**Automated pipettor**	✓ Use with all plastic, glass and Pasteur pipettes ✓ Adapters for 5 ml and 10 ml pipette tips ✓ Low battery indicator ✓ Attached support allows the unit to be rested on a table with pipette attached ✓ Convenient suspender available as an accessory ✓ Hydrophobic autoclavable filter prevents over - aspiration ✓ Included changeable adapters allow use with 5 and 10 ml tips ✓ Finger - tip control ensures precise delivery and aspiration ✓ Integral loop allows the unit to be suspended by DragonMed suspender hook for easy access ✓ Convenient fold - out bench stand supports the unit and pipette when not in use
7.	**Sterifil Aseptic System**	✓ Materials of Construction: Polysulfone funnel, funnel cover, receiver flask and cover; polypropylene holder base, and filter support screen; silicone stopper ✓ Filter Diameter, mm: 47 ✓ Filtration Area, cm^2: 15.2 ✓ Funnel Capacity, mL: 500 ml ✓ Prefilter Diameter, mm: 42 (thick depth prefilter) or 47 (membrane prefilter) ✓ Outlet Fitting: Holder outlet stopper fits standard 1 L filtering flask Receiver Flask Fitting: Receiver flask ports accept 6 mm (1/4") I.D. tubing or male Luer slip connection for vacuum, drain or vent ✓ Cover Inlet and Vent Ports: Female Luer slip ✓ Dimensions: Height, cm (in): 20.3 Diameter, cm (in): 10.8
8.	**Pocket pH meter**	✓ **Temperature compensation:** Automatic, 23 to 194°F (–5 to 90°C) ✓ **Range:** pH - 0.00 to 14.00; Temperature - 23 to 194°F (-5 to 90°C) ✓ **Resolution:** pH - 0.01; Temperature – 0.1° ✓ **Accuracy:** pH - ±0.01; Temperature – ±1.8°F (±1°C) ✓ **Calibration:** Up to three pH points ✓ **Buffer recognition:** 4.0, 7.0, 10.0 USA ✓ **Datalogging:** Yes ✓ **Waterproof:** Yes ✓ **Display:** 4-digit LCD ✓ **Power:** Four 1.5 V batteries (included) ✓ **Dimensions:** 6.9375 in x 1.375 in x 1.625 in (17.3 x 3.6 x 4.1 cm)
9.	**Microwave oven**	✓ Capacity: (Litre) 30 -38 ✓ Keypad Type Controls ✓ Cavity: Stainless Steel ✓ Control Type: Tact/Dial Type Controls ✓ Auto Cook Menu: 131 ✓ Microwave Frequency(MHZ): 2450 ✓ Watts Microwave: 1350 ✓ Watts Convection: 1350 ✓ Watts Combination: 2650 ✓ Turntable Diameter (mm): 320-340

		✓ Cooking Completion Alarm: Yes ✓ Child Lock: Yes ✓ Product dimensions (approximate): (W*H*D) mm 530*322*530
10.	**Air purifier**	✓ Air Purifier Cleaning Capacity- Covers 4000 ft3 with 3 room exchanges per hour ✓ Finish/Color-Graphite grey with black center ✓ Filters Included-Prefilter ✓ Capture filter-Advanced carbon monolith filter ✓ Catalytic Converter-Proprietary catalytic monolith ✓ Fan Speeds-Speeds 1-3, and auto mode ✓ Air Flow Rates- Speed 1 = 275 cfm; Speed 2 = 200 cfm; Speed 3 = 85 cfm ✓ Intake and Outflow of air purifier-3 way airflow ✓ Mobility-4 easy-glide, heavy duty casters ✓ Having "Replace Filter" Indicator ✓ Control Panel-Easy follow menu instructions ✓ Display panel-Electronic LCD Control Panel ✓ Control Type-Manual ✓ Power-110-120 volts, 60 hz ✓ Size-31" H x 15" W x 24" D ✓ Weight-71 lbs.
11.	**Hand-Held UV Torch**	✓ Convenient source of U/V light with torch facility. ✓ Battery operated. ✓ Hand strap included. ✓ Rechargeable Batteries with charger ✓ Unit measures approx: 16 x 2.3 x 5.4cm

Annexure : 'B'

Gautam Buddha University

School of Biotechnology

TECHNICAL SPECIFICATIONS

S.N	Item	Specifications
1.	**Deep freezer**	✓ Should have Temperature range of -15°C to -40°C (1°C increment) ✓ Minimum Capacity: 482 Liters ✓ Should have twin external doors (top/bottom) ✓ Should have atleast 5 drawers with individual freezer circuit for each of the drawers ✓ Should have Front mounted display/control panel located at eye level ✓ Memory backup, temperature display must be present ✓ Four casters & two adjustable feet ✓ Refrigerant should be HFC (CFC & HCFC Free) ✓ Should have Pre-coated metal body to prevent environmental damage (should not have painted meal body) ✓ Should have access port of 30mm diameter in the rear ✓ Compressor should be Hermetic rotary type ✓ Baskets: Min. 6 nos. of medium size at Top & atleast 8 nos. of small size at bottom ✓ Alarms: Hi/Lo temp, power failure, remote alarm ✓ Lockable door latch ✓ Self diagnostics ✓ Should have zero adjustment calibration via control panel
2.	**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.
3.	**Refrigerated Microcentrifuge**	✓ Microcentrifuge should have high *g*-force for optimal pelleting. ✓ Maintenance free motor spins up to 14,000 rpm or more and maintains 4^0C at maximum speed. ✓ Temp. range: -10^0C to $+40^0$C ✓ Time setting: 0 – 100 min. or more with hold. ✓ Rotor should have capacity of 24 or more x 1.5/2.2ml at 14,000 rpm or more, with preferably snap-on lid. ✓ CFC free refrigerant. ✓ Should have continuous and short run ✓ Easy lid opening due pneumatic spring support ✓ Stainless steel bowl ✓ Imbalance switch, display for speed (rpm and rcf) and temperature ✓ Lockable control unit, ✓ Precooling of the rotors during standstill ✓ Rotor should also be able to perform major applications: Minimizing post-PCR condensation. ✓ Rotor speed with Accel and Decel profile of ≤ 18 sec. ✓ Adaptors for 0.25ml and 0.5/0.75ml tubes should also be provided. ✓ Noise level at max. speed (approx.) < 60DB
4.	**StrataCooler LP Benchtop Cooler**	✓ Capacity: 32 standard cryovials ✓ Highly controlled freezing (<0.1°C loss per minute) ✓ 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% ✓ Should maintain –15°C for up to 2 hours at the laboratory bench ✓ Tube adapters should be provided, allowing the cooler to hold 0.5 ml tubes. ✓ Cooler should have a locking handle that secures the enzymes inside the cooler
5.	**Cryo storage system**	✓ Automation friendly design cryo storage system with fully loaded data tracking and scanning software ✓ Automated removal of caps using a socket controlling 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.
6.	**CO_2 Incubator**	✓ Capacity: 6.5 cu. ft. (184L) ✓ Air jacketed/water jacketed ✓ All mycoplasma, fungy, molds, yeast, bacteria and hard to kill spores inside chamber should be destroyed. ✓ Temp. Range :+5º.c. Above ambient to + 55 º.c. ✓ Temp. Uniformity ± 0.2º.c.@+37.0º.c.(98.6º.f) ✓ Temp. Control : ± 0.1º.c. ✓ CO_2 range : 0-20 % ✓ CO_2 control : better than ± 0.1% ✓ CO_2 sensor : infra red CO_2 sensor ✓ CO_2 uniformity ± 0.1% @ 5% ✓ Alarm conditions: temp: ± 1^0c, co_2: ± 1% ✓ Humidity : rh ambient to 95% @ +37^0c(98.6^0f) ✓ Precise direct-heat temperature control with choice of TC (thermal conductivity) or IR (infrared) sensor and convenient high-temperature decontamination cycle. ✓ Microprocessor control ✓ Electrical:180-250 v, 50/60 hz., 1.5 fla ✓ Interior chamber : stainless steel ✓ Interior chamber features 100% coved corners ✓ Four heavy duty perforated shelves ✓ Automatic electronic start up ✓ Hepa filter airflow system:provides 100% hepa-filtered air to create a clean culturing atmosphere ✓ Sterilizing heating facility upto 140°c to sterilize the incubator automatically ✓ One cylinder extra as an accessory
7.	**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.
8.	**Horizontal Electrophoresis Unit**	✓ Should includes buffer tank ✓ A safety lid with cables ✓ UV transparent gel tray of size, (cm) (W x L): 7 x 7, 7x 10, 15 x 15, 15 x 20. ✓ Two 1.5mm fixed height combs (8 well, 15 well, for small tray) and (15 well, 20 well, 30 well for large tray) ✓ Gel caster (small size and full size) ✓ Leak Proof System ✓ Distance to electrode, cm = 14.5 ✓ Bromophenol Blue Dye migration rates: 4.5 cm/hr (at 75 V) **Power Supply:** ✓ Programmable power supply should be capable to operate four electrophoresis units simultaneously for four identical runs with graphic LED display. ✓ Should offer timer control as well as constant voltage or constant current output, with pause/resume run capability.
9.	**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.
10.	**Fraction Collector**	✓ Standard spherical 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
11.	**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. ✓ Should have an attached colored laser printer
12.	**Heat Block**	✓ A 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
13.	**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
14.	**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
15.	**Laminar Airflow**	✓ (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 ✓ Separatorless Minipleat Anti-microbial HEPA filters of EU 13 grade with an efficiency of 99.99% on monodisperse, 0.3 micron challenge ✓ Nouveau multi-layer biocidal 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.
16.	**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
17.	**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
18.	**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 also should be provided

19.	**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
20.	**Micropipettes**	✓ Pipette kits for Starter volumes and Micro volumes. ✓ The kit should consist of 3 pipettes, supplied as a pack with, 3 single pipette holders, ✓ Colour identification labels and two Tip box with tips. ✓ Kit type one – Pipettes of volume range 2 – 20 µl , 20- 200 µl and 100 – 1000 µl ✓ Pipettes of volume range 0.2- 2 µl, and 1-5 ml should also be offered separately. **Micro Pipette (Pipetman) specifications:** ✓ -Volume should be continuously adjustable, with digital volumeter view. ✓ -Thumb wheel for volume adjustment. ✓ -Stainless steel micrometer and steel tip ejector. ✓ -Dual position tip ejector for lower volumes. ✓ -Strong body built of PVDF and Stainless steel for long life & thermal stability. ✓ -Pipette should be of dry-seal technology, where piston should not use grease ✓ -Tip ejector and Tip cone removable without any tools. ✓ -Tip cone should be easy to open for cleaning. ✓ -Opening of tip cone for cleaning should not require mandatory recalibration or disturb ✓ The existing calibration of the pipette. ✓ -Systematic and Random errors should be better than as specified by ISO 8655. ✓ -Calibration certificate should be enclosed with each pipette.
21.	**Mini-Vertical electrophoresis system for proteins & Blotting apparatus**	**Gel Specifications-** ✓ Versatile easy to use 2 mini gels (9x7 cm) SDS page to 4 mini gels (8 X 7 Cm) simultaneously. ✓ 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 & 1.5 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 10-500 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; ✓ Sudden load change detection ✓ Installation and training to the user to be provided by the vendor.
22.	**Refrigerator**	✓ Hermetic compressor with Microprocessor Temp. Control (Temp. Range: 2°C to 14°C) ✓ Control panel should be at eye level with Digital Temperature display & Alarms ✓ Capacity: 340 L ✓ Fan forced air circulation to ensure stable & uniform preservation environment ✓ Should have Cycle Defrost Function & evaporator temperature detection system to permit defrosting without increasing temperature inside cabinet ✓ Should have Easy visibility with 2 sliding glass doors with double paned glass with heat reflective film to block heat/UV rays ✓ Should have Door open Alarm, Hi/Lo Temperature alarm (both audible & visual) ✓ Should have abnormal Temperature safety device to prevent the contents of refrigerator from freezing or temperature from rising abnormally while alarms are activated ✓ Interiors and exteriors should be chemical resistant with baked on acrylic finish on galvanized zinc plated steel ✓ Should have Monitoring hole & Interior fluorescent lamp ✓ Shelves should be of rigid wire with polyethylene coating ✓ Evaporator: Should be Fin & tube; Forced air circulation type & Condenser: Wire & tube ✓ Insulation: CFC Free rigid foamed-in-place polyurethane
23.	**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.
24.	**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
25.	**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 ✓ Spare O rings 02 units of nitrogen gas cylinder to be used for ultrafiltration also should be quoted: ✓ Capacity approx 50l ✓ regulator and spanners for operation Should be provided filled with N2 gas
26.	**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 .
27.	**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. ✓ Dimensions should be approximately- Outside (WxDxH) 850 x 800 x 840mm, Inside (WxDxH) 580 x 590 x 540mm, Volume approximately 190 litres ✓ 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: -15^0 C below ambient to +70-80^0 C with accuracy of ± 10^{0}C ✓ Magnetic drive of the machine must be based on permanent magnets and it should be belt less. ✓ CO_2 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
28.	**Water bath**	✓ Total wattage consumption 230 V / 115 V - 2,395 VA ✓ Working temperature range- (-10°C to +80°C or more) ✓ Fixed temperatures- 5 (free selection) ✓ Temperature accuracy – (± 0.1 K) ✓ Display - multifunction, digital

		✓ Heating capacity - 2.000 W ✓ Cooling capacity at 20° C- 250 W ✓ Max. flow rate - 7.5 7 / min. or 15 l / min. ✓ Max. pump pressure - 300 mbar ✓ Bath volume (internal) - 2.8 l ✓ Overall dimensions (W x L x H)- 232 mm x 487 mm x 620 mm ✓ Unit weight - 30 kg ✓ Ambient temperature range - 10°C to 40°C ✓ Relative humidity (non condensing) - max. 80% at 31°C ✓ Voltage - 230 V ± 10% ✓ Frequency 230 V / 115 V - 50 -60 Hz / 60 Hz
29.	**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.
30.	**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
31.	**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

32.	**Precision balance**	✓ Readability: 0.001gm ✓ Capacity: 200gm ✓ repeatability: 0.001gm ✓ Linearity: 0.002gm ✓ Response time: 1.5 s ✓ Pan size: 114mm ✓ Calibration: automatic/internal
33.	**Biohazard Safety Cabinet**	✓ Nominal Size: 1.2 meters (4 Feet) External Dimensions (W x D x H): 1420 x 815 x 1540 mm; 55.9" x 32.1" x 60.6" Gross Internal Dimensions (W x D x H): 1260 x 623 x 670 mm; 49.6" x 24.5" x 26.4" ✓ Usable Work Area: 0.6 m^2 (6.5 sq.ft.) ✓ Tested Opening: 228.6 mm (9") ✓ Working Opening: 274 mm (10.8") ✓ Average Airflow Velocity Inflow : 0.53 m/s (105 fpm) ✓ Downflow : 0.35 m/s (70 fpm) ✓ Airflow Volume Inflow: 552 m^3 / h (325 cfm)Downflow, 63%: 924 m^3 / h (544 cfm) ✓ Exhaust, 37% : 552 m^3 / h (325 cfm) ✓ Required Exhaust With Optional Thimble Exhaust Collar: 901 m^3 / h (530 cfm) ✓ ULPA Filter Typical Efficiency: > 99.999 % at particle size between 0.1 to 0.3 microns ✓ Sound Emission NSF / ANSI 49 : < 63.5 dBA ✓ EN 12469 : < 60.5 dBA ✓ Fluorescent Lamp Intensity : > 1400 Lux (> 130 foot-candles) ✓ Cabinet Construction : Electrogalvanized steel with Isocide oven-baked epoxy-polyester powder coating 1.2 mm (0.05") / 18 gauge ✓ Electrical: 220-240V AC, 50Hz, 1ø ✓ Net Weight : 283 kg / 624 lbs ✓ Shipping Weight : 345 kg / 761 lbs ✓ Shipping Dimensions, Maximum (W x D x H): 1530 x 940 x 1900 mm; 60.2" x 37" x 74.8" ✓ Shipping Volume, Maximum : 2.73 m^3 (97 cu.ft.) ✓ Standards Compliance ✓ Air Quality: ISO 14644.1, Class 3, Worldwide JIS B9920, Class 3, Japan JIS BS5295, Class 3, Japan US Fed Std 209E, Class 1 USA Filtration: EN-1822 (H14), Europe IEST-RP-CC001.3, USA IEST-RP-CC007, USA ; IEST-RP-CC034.1, USA ✓ Electrical Safety: UL-C-61010A-1, USA CSA22.2, No.1010-192, Canada EN-61010-1, Europe; IEC61010-1, Worldwide

Annexure : 'C'

Gautam Buddha University

School of Biotechnology

TECHNICAL SPECIFICATIONS

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 ✓ 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.	**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.
3.	**Floor Centrifuge**	✓ A floor model centrifuge with: **(a) Swinging bucket rotor** (Capacity - 4 x 750ml; Max speed- 4700 rpm; Max rcf - 4579 X g) and **(b) Fixed angle rotors** (Capacity - 8 x 50ml; Max speed- upto 20,000 rpm; Max rcf – 47,808Xg) and 6 X 250ml. Max speed- upto 14,500 rpm; Max rcf – 31, 916Xg) ✓ Maximum capacity (mL) 4 x 1,000 ✓ Drive Brushless high frequency motor ✓ Accel/decel rates 9/10 ✓ Speed range (rpm) 300 – 22,000 ✓ Speed control accuracy (rpm) ± 25 ✓ Temperature set range (°C) -20 to +40 in 1°C increments ✓ Temperature control (°C) +2 to +40 ✓ Temperature accuracy (°C) ±2 ✓ Ambient temperature range (°C) +15 to +40 ✓ Approximate dimensions (H x W x D) mm (inches) 1100 x 750 x 850 (43 x 30 x 33) ✓ Control Microprocessor ✓ Programmability of multiple programs ✓ Functions Automatic RCF; ω2dt Integrator; Real Time Control; Step-Mode Runs; Controlled Access; Pre-Cool ✓ Run time (hr/min) 99/59; Hold ✓ Electrical V (Hz) 200/240 (50/60), 30 A, single phase ✓ Certification CE and cCSAus certified 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) Fixed-Angle Rotor with (6 x 250ml) capacity, individually sealed fixed angle. (3) High versatility Swinging Bucket Rotor (4 x 750mL) capacity;

		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,
4.	**Upright Fluorescence Microscope With Image Analysis System**	✓ **Microscope:** Bright field, Fluorescence and DIC observations. Motorized Z-focus drive with minimum step resolution of 15 nm or better. 6 position motorized FL filter wheel, 6 position motorized DIC nose piece. ✓ **Microscope Stand:** Motorized Z-focus drive with encoder with minimum resolution of 10 or better with dedicated TFT screen fixed to microscope frame for the visualization and control of observation modes.10 Position motorized FL filter wheel, 6 position motorized DIC nosepiece. .Motorized beam path selection for visual and imaging Application. Their should be a provision of mounting 08 transmitted light filters simultaneously. ✓ **Observation Tube:** Siedentopf design Trincoular Observation tube with inclination angle of 15 degree which should support F.No. 23 or higher. It should have 2 step light path selector of 100:0/0:100 ✓ **Condenser:** Motorized Achromat Aolanatic Condenser with 8 optical element slots (1 for BF, 1 for DF (upto 40X), 3 Phase Position and 3 DIC position. It should work for all objectives from 1X - 100X) ✓ **Eyepieces:** Paired Widefield Eyepieces of 10X with minimum field of view 23mm. , focusable & adjustable diopter setting of ± 5 ✓ **Illumination:** 12 V 100W Halogen Illumination (12V 100W Halogen Lamp ✓ **Objectives:** High resolution Plan Apochromat objectives 10x/0.45 & 40x/1.25 oil; 20/25x/0.70 & 60/63x/1.40 oil immersion; 100x/1.40 oil Immersion with complete DIC accessories for all objectives. It should have automatic component recognition facility for objectives so that whenever a objective is changed the software should automatically recognize it. Also a multi immersion objective suitable for Oil, Water and glycerol Plan Apochromat 25X / 0.8 W.D0.17 ✓ **Mechanical Stage:** It should have a Rectangular Hard coated anodized surface mechanical stage with stage size of 220 X 170 mm for X and Y movement of the specimen with right drive 135mm (extendable by 15mm)

		✓ **Fluorescence Attachment:** It should have a 10-position reflector turret with Push and Click mount (One should be able to Mount/ change / remove filter without using any Allen key) for mounting different Filter cubes.The beam path should be apochromatically corrected. It should have a self-adjusting 100W Mercury illumination. Band Pass Fluorescence Filters for FITC/GFP, DAPI/HOECHST, TRITC/RHODAMINE excitation to be quoted. ✓ **Digital Camera:** 12-bit Scientific Digital Microscopy Cooled Monochrome camera with Fire Wire interface of basic CCD resolution of 1.4 net effective pixels with pixel size 6.45 x 6.45 microns & 2/3" CCD Chip size, binning facility and frame rates upto 31 at 20 ms; Integration time of 1ms to 60s. It should have a fire wire interface for faster data transfer from Camera to Computer. Branded PC with UPS and Color inkjet Printer should be quoted with the system. ✓ **Software:** Advanced Image acquisition software with interactive measurement of intensity profiles, length, area, circle, angle , perimeter and counting of events; image splitter display for synchronous or independent comparison of upto 4 images; adjustment of display parameters without manipulation of pixel intensity values; Software for acquiring multichannel fluorescence images with automatic channel specific display optimization and pixel shift correction immediately after acquisition. Software for Z stack, Time Lapse should also be quoted. Point wise technical compliance statement to be attached. (Mentioning the page No of quotation and Catalogue) Microscope, Camera and Software should be from a single company for better integration
5.	**Incubator Shaker**	✓ With Refrigerator and Humidity control ✓ Temperature minimum : ambient –15^{0}C ✓ Temperature maximum : 80°C ✓ Humidity maximum - - 85 % r.h. ✓ Power consumption: < 2000W **Required dimensions:** ✓ Outside (WxDxH) approx.: 1275 x 805 x 765mm, ✓ Inside (WxDxH) approx.: 950 x 625 x 600mm ✓ Volume approx.: 350 litre ✓ Operating menu in preferably English ✓ Interface, standard CAN-Bus ✓ Interface, optional USB, Ethernet, digital, analogue ✓ Ambient temperature 10°C up to 35°C **Temperature** ✓ Setting, digital : 0.1°C. ✓ Accuracy, absolute: ± 0.30°C (37°C) ✓ Principle of sensor: Pt-100

		✓ Power of heating: 1000W ✓ Power of cooling: 155...270W ✓ Air circulation: 300m3/h **Humidity** ✓ max. at 25..55°C: 85% r.h ✓ Setting, digital: 1% r.h. ✓ Accuracy, absolute: ± 2% r.h. ✓ Principle of sensor: capacitive ✓ Water refill should be automatic ✓ Water heater: 300W ✓ Door heater: 100W **Shaking unit** ✓ Tray, size F: (800x420mm) ✓ Loading, maximum: upto 25kg ✓ Setting, digital: 1 rpm ✓ Accuracy, absolute: ± 0.1 rpm ✓ Timer: 1s ... 999h ✓ Acceleration: controlled ✓ Active brake should be adjustable ✓ Stop on position : adjustable **Mains connection** ✓ 220 - 240 V / 50-60 Hz ✓ 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
6.	**Inverted Microscope**	✓ **Microscope Body :** Multi-port design Microscope body with Infinity optical corrected optical system, Extendable optical free space upto 80mm for attaching TIRF/ Other Attachment etc. in future, facility for 4 way or more light distribution path, up/ down focusing, left & right side port for attaching digital camera upgradable to one additional port for another camera, binocular tube with Phase ring can be incorporated in the microscope body which allows use of high N.A. objective/s to produce high resolution phase contrast images without the use of light attenuating phase contrast objectives, built-in Bertrand lens & darkslide shutter along with diopter adjustment facility. built-in 1.5x magnifier or better in the main body to increase magnification. ✓ **Condenser:** Universal turret condenser (suitable for all microscopy techniques) with 5 position Illumination: 12V 100W Precentred Halogen Illumination. ✓ **Eyepieces:** 10X with F.O.V 22 or better and diopter adjustment facility on both eyes, anti fungus type, ✓ **Nosepiece:** sextuple revolving nosepiece to accommodate six objectives at a time. ✓ **Stage:** Mechanical Stage for easy sample observation ✓ **Objectives:** High performance Super Plan Fluor & Apochromat Long working distance Objectives suitable for Brightfield/Phase Contrast/ fluorescence/ DIC Observation with facility of coverglass correction. 4x (0.13, W.D.16.4 mm) 10x(N.A.0.3,W.D.15.2mm), 20X(N.A.0.45,W.D.8.2-6.9mm),

		40X(N.A.0.6,W.D.3.6-2.8mm) 60X(N.A.1.40, W.D.0.13mm) ✓ Epi fluorescence attachment With 6 position turret filter block, Noise Terminator mechanism incorporated for high signal to noise ratio images with Precentred Mercury Fibre Illuminator of 130W with facility for no heat and electrical noise transfer from lamp to the microscope body is conducted, lamp should have lifetime of 2000 hrs or more. Light intensity can be controlled through PC. Band pass Fluorescent filters for FITC/GFP (Ex 465-495, DM 505, BA515-555), TRITC/Rhoda mine (Ex 540/25, DM 565, BA605/55), DAPI/Hoechst (Ex 340-380, DM 400, BA435-485) applications so that no cross talk is available. ✓ **Digital camera:** Digital color cooled camera capable of handling very low light fluorescence, brightfield, darkfield or DIC images with 2/3" high density ccd chip, approx. 12.7 million pixel resolution (2200 TV Lines), 19 f/p/s/ with full screen size, cooling 10ºc below ambient, 12-bit digitization, exposure time 1/16,000 to 60 sec., Dynamic range 2000:1, USB Port for attaching camera onto desktop/laptop through single wire ✓ **<u>SOFTWARE</u>** Advance Research Imaging Software for fully automated acquisition and device control through l four -dimensional image acquisition and analysis (X, Y,Z, Time) should have following features :- • Image Acquistion. • Time Lapse Imaging, • Z-Stack, Multi-channel Fluorescence, Annotation, • 2D / 3D View, ND Viewer, Filter, Morphology, Large Image, • Macro, Segmentation, Auto-measurement, Report Generator facility, • Data Base, Vector layer & Multi-Dimensional File Format (ND format) • Auto Measurement and Auto counting **Note :-** The Microscope, Camera and Software should be from one Manufacturer for better compatibility and upgradability. This is an essential requirement, over and above the specifications Data Processing Unit: Branded With, 2 GB Ram, DVD Writer, 250GB Or Higher Hdd, 18.5" TFT Color Monitor , Multimedia Kit Along With Ups And Color Inkjet Printer
7.	**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
8.	**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.
9.	**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. ✓ Pentium IV PC branded with LCD monitor and DeskJet color printer. ✓ 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. ✓ 0.5 and 1.0 ml volume cuvettes (Two cuvettes for each volume) also to be quoted ✓ Routine peltier temperature control system accessory for sample and reference positions with selectable temperature range (0-100°C) to be include. ✓ Should be ISO-9001 Certified Company.
10.	**Multi-mode plate reader**	**Modes:** UV-visible Absorbance (Monochromator), Fluorescence Intensity (Monochromator as well as filter), Luminescence, Time Resolved Fluorescence, Fluorescence Polarisation. **Range:** ✓ Absorbance: 230 – 970nm (Monochromator with 1nm increment). ✓ Resolution: 0.0001 OD **Pathlength correction:** Pathlength correction automatically normalizes well absorbance to standard cuvette equivalent pathlength of 1 cm for direct quantification. (Monochromator in 1nm increments with Pathlength correction.) ✓ Fluorescence Intensity: 250 – 900nm (Double grating monochromator Top and Bottom optics 1nm increment). ✓ Luminescence: 300 – 700nm. ✓ Time resolved fluorescence: 200 – 900nm. ✓ Fluorescence polarization: 300 – 700nm. **Light Source:** Xenon Flash Lamp and dichroic mirrors. **Machine should be able to read :** 6, 12, 24, 48, 96 & 384well plate and **Up to** Sixteen 2µL samples can be run at one time for direct nucleic acid and protein quantification. Microplate Types: 1-384 well. Compatible with Take3 Multi-Volume Plate with 2 µL microspots **Temperature control:** 4°C above ambient to 50°C **Shaking:** Yes, user programmable. **Software:**

		✓ Software for data acquisition and analysis ✓ Control through USB or serial port **Top and Bottom optics adjustment:** Automated Pathlength correction facility automatic software for data reduction and calculation. **Reading Modes:** End point, kinetic, spectral scanning, well-area scanning **Reagent Dispenser:** ✓ Dispense Accuracy: ±1 µl or 2% ✓ Number: 2 syringe pumps ✓ Plate Geometry: 1- to 384-well microplates ✓ Dispense volume: 5 - 1000 µl in 1 µl increment ✓ Dead volume: 1 ml, 100 µl with back flush ✓ The system should be supplied with a branded desktop with 4GB RAM, 500GB HDD, 19 Inch TFT Monitor and color laser printer. **UPS:** An un-interrupted power supply (UPS) suitable for running this machine for atleast 3 hours backup.
11.	**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.
12.	**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

GENERAL TERMS AND CONDITIONS

1. Detailed information about the Equipments/Instruments and their specifications are available in tender document, which can be downloaded from the University website www.gbu.ac.in.
2. Two bids system of tender will be adopted.
   (i) The bid containing technical specifications and EMD
   (ii) Bid containing financial offer

   Technical and financial bids should be submitted in separate covers. The envelopes should be marked as technical bid and financial bid with reference numbers. These two envelops shall be sealed in a common cover and addressed to **The Registrar, Gautam Buddha University, Greater Noida, Gautam Budh Nagar -201310 (U.P.)** superscribing "**Tender against Notification Advt. No.: GBU/S&P/04/2011, Name of supply: Laboratory Equipments for School of Biotechnology"** so as to reach us on or before last date of bid submission.

3. The Technical Bid and Financial Bid should be duly filled-up.
4. These bids will be opened in two stages. The bid containing technical specifications and EMD will be opened at first stage and if same is found according to required specifications, the bid containing financial offer shall be opened in second stage.
5. The "**Technical Bid"** shall contain all documents in support of quoted Equipments/Instruments, their 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 price schedule only. The rates and units shall not be overwritten in the price schedule. The price shall be both in words and figures.

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 Equipments/Instruments to institute of National repute such as IIT, AIIMS, CSIR labs etc. The company should also furnish a list of clients of last 3 years.
   (d) Certified copy of balance sheet with trading, profit & loss account for the last three financial years should be submitted.
   (e) Name of branch offices & service centres after sales arrangements.
   (f) Earnest Money Deposit (EMD) **as 2% of the offered cost** is 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. If supply is not made within the prescribed period EMD would be forfeited.
   (g) Authorized signatory should sign on all pages. Bids without authorized signature will be rejected.
   (h) ***Minimum turnover required to procure the equipments/instruments :*** *No turnover is required for Annexure – 'A', Rupees One Crore for Annexure – 'B' and Rupees Two Crores for Annexure – 'C'..*
   (i) The bidder must be either sole Manufacturer of the Equipments/Instruments or the authorized agent/representative of the OEM. In the case of

agent/representative, certified copy of the agency/authorization issued by the OEM should be enclosed with the tender.

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 possessing 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, Greater Noida, 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 required for final installation of the Equipments/Instruments.
11. The Equipments/Instruments should have USEPA/International/National validation certificates, wherever applicable.
12. The cost of the tender is Rs.1000/- (Rupees One Thousand) inclusive of taxes (Non-refundable) 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" and should be attached with technical bid envelope.
13. The EMD of the successful bidder will be refunded after two months of the completion of the supply and installation of the Equipments/Instruments to the satisfaction of the Gautam Buddha University. 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.
14. The required delivery period must be mentioned against each item. Tenders should preferably be given only for those equipments/items/articles, which are available ex-stock. 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).
15. Detailed specifications with the mention of make and model/Version of each item should be clearly given supported by the illustrated pamphlets wherever possible. Quotations without specified make and Model/Version and other particulars may be rejected. The payment will be made after the goods have been received, opened, checked, installed and found to be working satisfactorily as per the specifications and requirements. The accessories included in the Equipments/Instruments should also be clearly mentioned.
16. Losses or damage in transit will be borne by the Supplier. The supplier may, if he so desires, get the goods insured and include such charges in the tendered rate.
17. Offered prices should be valid at least for two months from the last date of receipt of tenders.
18. 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 Buddha Nagar and not elsewhere.
19. (a) The Equipments/Instruments delivery time should be preferably within 6-8 weeks after the date of issuance of the purchase order. If the delivery time is quoted more than 6-8 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 stipulated period**,** 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 stipulated delivery period and in accordance with the specifications given in the quotations, the University shall be free to cancel the order.

20. Supply of the placed order in part will not be accepted.
21. The University's term for payment: 90% against delivery of items in good condition, installation and putting those in satisfactory working conditions; balanced 10% payment shall be released after 60 days of satisfactory working of the items. For balance 10% payment, the firm has to raise bill/letter for balance payment. No advance payment shall be released.
22. The AMC cost, wherever applicable, after warranty period shall be made in equal installments at the end of each quarter subject to satisfactory service rendered.
23. The price quoted should be in Indian Rupees.
24. No revision of price bid will be allowed once the price bids are opened.
25. No increase in price will be allowed after our purchase order(s) are placed.
26. Warranty certificate against all the Equipments/Instruments developed defects covering warranty period, which commences from the date of installation shall be given at the time of supply of the Equipments/Instruments.
27. Inspection certificates of the equipments/instruments 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 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 Equipments/Instruments supplied is fully operational and no additional accessory or space is required to fully functioning the Equipments/Instruments should be issued along with 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 manuals/installation drawings/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 firms are shortlisted based on the eligibility criteria and technical specifications, only then the financial bids of the firms meeting eligibility criteria, technical specifications / 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 : ……

: ……

: ……

Annexure : 'A'

Gautam Buddha University

School of Biotechnology

FINANCIAL BIDS

S.N	Item	Qty.	Unit Price (Rs. In figure)	Unit Price (Rs. in words)	Total Cost (Rs.)
1.	Glass bead sterilizer	04			
2.	Liquid Nitrogen storage Tank	02			
3.	Programmable Photoperiodic Controller	02			
4.	Microclimatic Temperature Controller	02			
5.	Vortex	10			
6.	Automated pipettor	02			
7.	Sterifil Aseptic System	10			
8.	Pocket pH meter	02			
9.	Microwave oven	04			
10.	Air purifier	04			
11.	Hand-Held UV Torch	02			

DECLARATION

1. The information given in the financial bid by the undersigned is correct.

SIGNATURE OF THE AUTHORISED SIGNATORY: _____

NAME OF THE SUPPLIER : _____

ADDRESS : _____

_____

Annexure : 'B'

Gautam Buddha University

School of Biotechnology

FINANCIAL BIDS

S. No.	Item	Qty.	Unit Price (Rs. In figure)	Unit Price (Rs. in words)	Total Cost (Rs.)
1.	Deep freezer	04			
2.	BOD Incubator	03			
3.	Refrigerated Microcentrifuge	04			
4.	StrataCooler LP Benchtop Cooler	05			
5.	Cryo storage system	01			
6.	CO_2 Incubator	02			
7.	Distillation Unit with softner	01			
8.	Horizontal Electrophoresis Unit	10 04			
9.	Electroporator	01			
10.	Fraction Collector	02			
11.	Gel documentations system	01			
12.	Heat Block	05			
13.	Tissue Rupture System	01			
14.	Ice Flaking Machine	01			
15.	Laminar Airflow	06			
16.	Magnetic stirrer	10			
17.	Minispin	08			
18.	Peristaltic Pump	02			
19.	pH meter	06			
20.	Micropipettes	20 Sets 5ml= 2, 2µl= 5			
21.	Mini-Vertical electrophoresis system for proteins & Blotting apparatus	06			
22.	Refrigerator	05			

23.	**Tissue Culture Rack**	**15**			
24.	**Transilluminator**	**01**			
25.	**Stirred cell Unit**	**02**			
26.	**Vacuum Pump**	**04**			
27.	**Humidity Controlled Incubator Shaker**	**02**			
28.	**Water bath**	**05**			
29.	**Ultrasonic processor**	**01**			
30.	**Forced Air Oven**	**02**			
31.	**Semi Microbalance**	**05**			
32.	**Precision balance**	**03**			
33.	**Biohazard Safety Cabinet**	**04**			

DECLARATION

1. The information given in the financial bid by the undersigned is correct.

SIGNATURE OF THE AUTHORISED SIGNATORY: _____

NAME OF THE SUPPLIER : _____

ADDRESS : _____

_____

Annexure : 'C'

Gautam Buddha University

School of Biotechnology

FINANCIAL BIDS

S. No.	Item	Qty.	Unit Price (Rs. In figure)	Unit Price (Rs. in words)	Total Cost (Rs.)
1	Ultra low temperature deep freezer	03			
2	Horizontal Sterilizer	01			
3	Floor Centrifuge	02			
4	Upright Fluorescence Microscope With Image Analysis System	01			
5	Incubator Shaker	02			
6	Inverted Microscope	01			
7	Protein purification system	02			
8	Nanodrop Spectrophotometer System	02			
9	UV-Vis Spectrophotometer	03			
10	Multi-mode plate reader	01			
11	Water Purification system	01			
12	Compact Autoclavable Benchtop Fermentor	01			

DECLARATION

1. The information given in the financial bid by the undersigned is correct.

SIGNATURE OF THE AUTHORISED SIGNATORY: _____

NAME OF THE SUPPLIER : _____

ADDRESS : _____

_____