



**DEPARTMENT OF MICROBIOLOGY  
ASSAM UNIVERSITY, SILCHAR**

(A Central University constituted under the Act of Parliament of India in 1994)

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**NOTICE INVITING TENDERS**

Assam University, Silchar, a central university invites **SEALED BIDS** from reputed manufacturers /authorized distributors / authorized firms with sound technical capabilities for supply, installation and commissioning of the following items to be procured under DBT-twinning Project in the Department of Microbiology, Assam University, Silchar.

Serial no.	Description and specification of the item	Quantity required	Last date of submission of sealed tender
1.	<p><b>Refrigerated Centrifuge:</b></p> <p><u>System should have following specifications:</u></p> <ul style="list-style-type: none"><li>• System should have max RCF of 20,913 x g.</li><li>• System should have max RPM of 14000 RPM.</li><li>• Acceleration time: 10s</li><li>• Deacceleration time : 10s</li><li>• Soft ramp function for adjustable for rotor acceleration and braking slowly.</li><li>• Timer should be of 30 s –99 min with continuous run function continuous.</li><li>• Noise level should be &lt;55 dB.</li><li>• Wide temperature range from -9°C to +40°C, which is modifiable during the run operation.</li><li>• System should able to store 35 user define procedure.</li><li>• System should able to switch display between rcf and rpm speed setting.</li><li>• Should have Short Spin Function.</li><li>• Should have "At Set RPM" function - time count starts after reaching the set rpm.</li><li>• Should have Fast Temp function - to start a temperature control run directly (Fast pre-cooling).</li><li>• Should have Fast Temp pro function - to start a temperature control run with defined start time.</li><li>• System should have ECO Shut off Function to reduce energy.</li><li>• Should have Built in condensation drain to eliminate water condensation/ eliminate water accumulation and prevent corrosion.</li><li>• System should have automatic rotor recognition and imbalance detection for maximum operational safety.</li><li>• System should have Quick lock technology for quickly opening and closing the rotor lid.</li></ul>	One	21.12.2016

	<ul style="list-style-type: none"> <li>• System should have standby cooling function to hold temperature when centrifuge is not in use.</li> <li>• System should have dynamic Compressor Control (DCC) technology for optimized cooling performance.</li> <li>• System should have 4 X 100 ml swing out bucket rotor with adapter for 15 ml conical tubes &amp; Falcon tubes -16 nos, and adapter for 50 ml conical tubes &amp; Falcon tubes - 4 nos, max speed of 5000 RPM and RCF of 4500 X g.</li> <li>• System should be quoted with aerosol tight 30 X 1.5/2.0 ml rotor with max RPM of 14000 and RCF of 20800xg.</li> <li>• System should have Maximum capacity of: Fixed angled 48 X 1.5/2.0 ml, 6 X 85 ml rotor with adapter of 15/50 ml Falcon/ Conical tubes and swing out rotor 4X250 ml tubes for 10XMTP &amp; 2XDWP rotors.</li> <li>• Should have Power supply: 230 V / 50-60 Hz.</li> <li>• Power requirement: Max. 1650 W</li> <li>• Should have Dimension (WxDxH) : 70x61x35 cm.</li> <li>• Low access height (28 cm) for easy loading and unloading of samples.</li> <li>• Instrument should be European CE certified/ USFDA and should posses IVD conformity.</li> <li>• Instrument should be provided with voltage stabilizer.</li> </ul>		
2.	<p><b>-80°C Freezer (Upright)</b>  <u>System should have following specifications:</u></p> <ul style="list-style-type: none"> <li>• Vertical Freezer should have Microprocessor-controlled temperature facility and alarms with non-volatile memory.</li> <li>• Capacity should be 410 Liters/ 14.5 cubic ft. or above. Sample storage capacity should have minimum 24,000.00 (in 2” box).</li> <li>• Freezer should have 5 compartments and 4 adjustable-height shelves, with 5 insulated inner doors.</li> <li>• Freezer should have Vent Plunger to prevent vacuum formation, Keyed lock, polished 304L stainless steel interior, exterior: 18 gauge steel, 1.2 mm thick, powder coated, scratch and rust resistant.</li> <li>• Freezer should have programmable temperature range from – 50<sup>0</sup>C to -86<sup>0</sup>C, in 1<sup>0</sup>C increments, even at 32<sup>0</sup>C ambient temperature. Alarms with non-volatile memory.</li> <li>• Display: Large, bright, digital LED characters, ½”, 1.3 cm high, mounted at eye level.</li> <li>• Minimum Power Consumption approx. 12.6 kWh/Day.</li> <li>• Freezer should have the facility for Automatic Reset, Automatic Restart with Non-Volatile memory, programmed Restart.</li> <li>• Freezer should have Hermetically-sealed two-stage cascade refrigeration system with CFC, HCFC free refrigerants.</li> <li>• Battery Back up: Activates alarms and displays temp. during power outages. Separate on-off switch provided for Cleaning/ Servicing/Thawing.</li> <li>• Compressor: Low-noise, Heavy duty &amp; commercially available.</li> <li>• Circulation: requires just one fan for reduced power consumption and noise.</li> <li>• Lock and Key: for outer doors/lid. Barrel lock is removal.</li> <li>• Lockable security plate: protects on-off switch &amp; alarm on-off.</li> <li>• Door latch: Molded handle with built in removal lock.</li> <li>• Inner doors: Five insulated doors. Stainless steel hinges unscrew for defrosting/cleaning.</li> <li>• Cabinet &amp; Door seals: insulated &amp; fitted with low temp. seals on outer doors.</li> <li>• Audible alarm: High/Low temperature, power out and System fail.</li> </ul>	One	21.12.2016

	<ul style="list-style-type: none"> <li>• Visual alarm: High/Low temperature, power out and System fail, battery low, filter clean &amp; fault analysis.</li> <li>• System should have remote alarm contacts.</li> <li>• Internal Dimensions 126.5 cm x 55 cm x 57.5 cm (H x W x D), External : 191.5 cm x 80 cm x 85.2 cm (H x W x D).</li> <li>• Net Weight 235 Kg. and Shipping Weight 283 Kg.</li> <li>• Freezer should have Unique 4-digit Password to prevent unauthorized changes.</li> <li>• Freezer should have S.M.A.R.T. Plus™ Diagnostic Software to trace and solve system errors.</li> <li>• Freezer should have CE Certified and UL Certified.</li> <li>• Instrument should be provided with voltage stabilizer.</li> </ul>		
3.	<p><b><u>Gel Documentation:</u></b></p> <p><u>System should have following specifications:</u></p> <ul style="list-style-type: none"> <li>• System should have Image resolution &gt;4 mega pixels for resolving closely spaced bands on a gel or blot.</li> <li>• System should have 4.6 x 4.6 µm pixel size &amp; &gt;3.0 orders of linear dynamic range.</li> <li>• System should be completely automatic &amp; user does not have to zoom, focus, adjust aperture or select light source.</li> <li>• System should be modular with different sample trays &amp; flexible to image a wide variety of applications, including nucleic acid, visible dyes, SYBR safe and Stain Free Gels.</li> <li>• System should have UV, White light, &amp; optional Blue light.</li> <li>• System should have Stain-Free capability for stain-free gels and blots.</li> <li>• Sample trays should be customizable per user and recognized automatically.</li> <li>• System should require only one emission filter with 3 optional filters to accommodate a large portfolio of detection methods: ethidium bromide, SYBR® Green, SYBR® Safe, SYBR® Gold, GelGreen, GelRed, Fast Blast™, SYPRO Ruby, Flamingo™, Oriole™, CY3, rhodamine, green fluorescent protein, Hoechst, Krypton, silver stain, copper stain, zinc stain, Coomassie Brilliant Blue, Coomassie Fluor Orange, and other spectrally similar stains, labels, and dyes.</li> <li>• Should have lens flat-fielding calibration for each sample tray to deliver image data that are always optimized and reproducible without imaging artifacts, providing superior image uniformity and quantitation.</li> <li>• System should be compact with small footprint</li> <li>• System should be CCD detector.</li> </ul> <p><i>Gel Doc System Software-</i></p> <ul style="list-style-type: none"> <li>• Software should have highest level of automation in hardware calibration, image optimization, capture, and analysis.</li> <li>• Should have automated workflow recorded in a protocol file from image capture to results thus eliminating need for training.</li> <li>• Should allow 100% repeatability of the workflow by any user and ensures optimized image data and analysis from a gel in a single uninterrupted, fast, and completely reproducible workflow.</li> <li>• Should have automated image capture driven by a selected gel or blot application.</li> <li>• Should have one-button acquisition from image capture to result.</li> <li>• Should generate the publication ready images (dpi, dimension and format) with one click export option.</li> <li>• Should generate customizable reports.</li> </ul>	One	21.12.2016

	<ul style="list-style-type: none"> <li>• Should have feature for Automatic print when only imaging and printing is required.</li> <li>• Software should have easy copy/paste functionality, crop, zoom, 3D and colors.</li> <li>• Should be supplied with a suitable PC/ Laptop.</li> <li>• Instrument should be provided with voltage stabilizer.</li> </ul>		
4.	<p><b>PCR (Gradient Thermal Cycler):</b></p> <p><u>System should have following specifications:</u></p> <ul style="list-style-type: none"> <li>• Gradient Thermal Cycler with Peltier heating and cooling based system.</li> <li>• Should be supplied with dual block of 2 x 48 x 0.2 ml, which can be independently controlled.</li> <li>• The dual block should also have gradient capability, which can be independently controlled for both the blocks at different times.</li> <li>• Only dynamic gradient technology will be accepted.</li> <li>• A total of 16 gradients should be possible using both the blocks.</li> <li>• Should also have an option to add 96 X 0.2 ml Block or 384 Well Block. All the blocks should have the gradient capability.</li> <li>• Should have a maximum ramp rate of 4 degC/second.</li> <li>• Should have adjustable heated lid.</li> <li>• Should have block and calculated temperature control modes.</li> <li>• Should have protocol auto writer for easier programming to run a standard, fast or ultrafast protocol.</li> <li>• Should have a temperature range of 0-100 deg C.</li> <li>• Should have a temperature accuracy of <math>\pm 0.2</math> deg C.</li> <li>• Should have a temperature uniformity of <math>\pm 0.4</math> deg C well to well within 10 seconds of arrival at 90 degC and have 6 Thermoelectric modules.</li> <li>• Should have a gradient range of 30-100 deg C and use dynamic ramping for gradient.</li> <li>• Should have a high resolution touch screen display with 6 USB ports for Protocol transfer and multiple connectivity.</li> <li>• The system should be capable of connecting up to 32 PCR/Real Time PCR and can be operated using a PC or directly from the PCR system.</li> <li>• Should have a memory of &gt;1000 programs with further expansion through a USB Flash drive for transfer of files.</li> <li>• Option to protect files with optional log-in, restricted user privileges and secured mode for controlled environment should be there.</li> <li>• Should have automatic option for graphical or text based programming.</li> <li>• The software should have exportable Run logs and system error logs.</li> <li>• The system should be capable of using through a PC or without it.</li> <li>• It should be possible to control additional 3 cyclers through one instrument.</li> <li>• Should be upgradeable to a 6 Channel Real Time PCR with gradient capability.</li> <li>• Should have O-ring seal to protect thermal electric modules.</li> <li>• Should be licensed for Research and IVD Applications.</li> <li>• Instrument should be provided with voltage stabilizer.</li> </ul>	One	21.12.2016

5.	<p><b><u>Sonicator:</u></b></p> <p><u>System should have following specifications:</u></p> <ul style="list-style-type: none"> <li>• It should expand the programme of ultrasonic homogenizers.</li> <li>• Microbiologists should disrupt yeasts or bacteria.</li> <li>• Biologists and cell biologists must homogenize cells from tissue cultures.</li> <li>• Chemists should use it to generate emulsions or dispersions.</li> <li>• Molecular biologists and biochemists should disrupt macromolecules such as DNA with ultrasound.</li> <li>• The various probes available should make the optimal choice even for special applications.</li> <li>• Its high efficiency should ensure that samples are rapidly disintegrated – the isolation of DNA, RNA and proteins is made more efficient than when using hand homogenizers.</li> <li>• In addition you can reduce the use of enzymes, which would otherwise be needed for lysing the cells.</li> <li>• The instrument should include an integrated sound abating chamber with height adjustable sample table.</li> <li>• If connected to a PC, even the energy input into the sample should be monitored.</li> <li>• It should be convenient, handheld instrument that allows fast sonication with a maximum of 100 W output.</li> <li>• The application range should be between 10 µl with the 0.5 mm dia probe and 750 ml maximum with the 10 mm dia probes.</li> <li>• Using a flow cell a larger samples should be processed.</li> <li>• Operating frequency: 30 kHz.</li> <li>• Output: max. 100 W.</li> <li>• Output settings: 20 to 100 %</li> <li>• Duty cycle (pulsed operation): 0 to 100 %</li> <li>• Probes available (dia in mm): 0.5; 1; 2; 3; 7; 10</li> <li>• Power consumption: 115 W</li> <li>• Setting times: by means of an optional timer.</li> <li>• PC-connection: Optional, socket integrated.</li> <li>• Operating temperature: + 5 to + 40 °C.</li> <li>• Limits of humidity: 10 to 90 %, non-condensing.</li> <li>• Line voltage: 230 V/ 50 Hz, 115 V/ 60 Hz.</li> <li>• External dimensions: W x H x D 130 x 180 x 50 mm.</li> <li>• Weight (net): 0.75 kg</li> <li>• Instrument should be provided with voltage stabilizer.</li> </ul>	One	21.12.2016
6.	<p><b><u>UV-Visible Spectrophotometer:</u></b></p> <p><u>System should have following specifications:</u></p> <ul style="list-style-type: none"> <li>• Spectrophotometer with UV/VIS spectral range 200 nm to 830 nm.</li> <li>• System with Freely Selectable wavelengths across the entire spectral range (Increment 1 nm).</li> <li>• Xenon Flash lamp with Very long line life.</li> <li>• Spectral bandwidth of ≤4 nm.</li> <li>• Random error absorption of ≤0.002 at A=0; ≤0.005 (0.5%) at A=1</li> <li>• Systematic error of ± 1 %</li> <li>• Display of 5.7 inch VGA TFT display.</li> <li>• System should have CMOS Photodiode array for beam receive r absorption.</li> <li>• Light path height of 8 mm or better.</li> <li>• Method memory of 100 programs.</li> </ul>	One	21.12.2016

	<ul style="list-style-type: none"> <li>• System should have help box with explanation of each individual steps in 5 languages.</li> <li>• Compatible with microliter measuring cells and standard cuvettes.</li> <li>• Integrated application and result memory.</li> <li>• USB interface to connect to PC if required.</li> <li>• System with RS 232 interface.</li> <li>• System should be supplied with 200 nos of disposable cuvettes with UV and Vis range 220-1600 nm with dual path length of 2mm and 10 mm.</li> <li>• System should be quoted with micro volume measuring cell as optional.</li> <li>• Instrument should be provided with voltage stabilizer.</li> </ul>		
7.	<p><b>Light Microscope</b></p> <p><u>System should have following specifications:</u></p> <ul style="list-style-type: none"> <li>• Microscope stand with Right Hand Stage with Koehler Illumination, Add on lens for condenser, 5 Position Nosepiece, Universal Power Supply, mechanical stage with non-extending rack and slide holder, LED illumination, Auto off, built in handle and cord wrap, Dust Cover</li> <li>• Contrasting technique – transmitted light Bright field, Dark field, Phase contrast</li> <li>• Infinity corrected &amp; Harmonic Compensated (HC) Optical System</li> <li>• 30 degree Trinocular Tube with locking mechanism for eyepieces along with 10x eyepiece pair with 20 mm. field of view</li> <li>• Condenser Achr.apl. A 0.9 (P) with switchable condenser head, with color coding for fast and easy adjustment of the aperture diaphragm, for brightfield and polarisation (qualitative), optional equipment for darkfield and phase contrast available, with slot for sliders</li> <li>• Plan Achromat Objective set 10x/0.25 PH1, 20x/0.40 PH1, 40x/0.65 PH2, 100x/1.25 OIL PH3</li> <li>• Microscope should be supplied with a suitable PC/ Laptop (photography attachment).</li> <li>• Digital color camera with CMOS sensor (1/2)" <ul style="list-style-type: none"> <li>- stand-alone operation without any PC possible.</li> <li>- High definition live image 1920x1080p, 30fps.</li> <li>- JPG images with max. 10Mpixels.</li> <li>- MP4 movie clips with max. 2 Mpixels.</li> <li>- Camera control via computer (PC mode) or via remote control RC2 (HD mode).</li> <li>- Capture of JPGs or MP4s directly to SD card or to PC using LAS, LAS-EZ or Acquire (Mac).</li> <li>- USB2 connection, compatible with PCs and notebooks.</li> <li>- Camera kit includes MC190 HD camera, USB2 cable 1.5m, HDMI cable 2.5m, Power Supply 5V, RC2 remote control, SD Card, Leica software for use with PC or Mac.</li> <li>- Supported OS: Win7/Win8/MacOSX/Latest.</li> <li>- Recommended c-mount adapter 0.5x/0.55x.</li> </ul> </li> <li>• Microscope, Camera &amp; Software should be from the same manufacturer for better compatibility.</li> <li>• Instrument should be provided with voltage stabilizer.</li> </ul>	One	21.12.2016

8.	<p><b>-20° C Freezer (Vertical):</b></p> <p><u>System should have following specifications:</u></p> <ul style="list-style-type: none"> <li>• Temp Range: -16° C ~ -25° C.</li> <li>• Capacity: 340 Ltrs.</li> <li>• No. of Door/Type: I/Solid.</li> <li>• Dimension: 24' x 25' x 73'</li> <li>• Storage Type: 2+5 Pull Out Drawers.</li> <li>• Wheels: 2 Rear wheels.</li> <li>• Tropical zed at 43° C</li> <li>• Body Insulation – 80 mm.</li> <li>• A+ Category–Low Power Consumption 0.78 unit/ 24 Hrs.</li> <li>• Should have: Lock &amp; Digital Temperature Display.</li> <li>• Instrument should be provided with voltage stabilizer.</li> </ul>	One	21.12.2016
9.	<p><b>Laminar Air Flow:</b></p> <p><u>System should have following specifications:</u></p> <ul style="list-style-type: none"> <li>• The cabinets should be fabricated out of thick board duly sunmica clad.</li> <li>• The interior surface should be epoxy painted for its longer life.</li> <li>• The work table should be made of thick board pasted in S.S. lined at top.</li> <li>• Side panels should be made out of thick transparent plexi glass duly framed.</li> <li>• The unit should be fitted with pre-filter and is made to pass through highly effective HEPA filters having efficiency rating as 99.99% with cold DOP and 99.97% with hot DOP, retaining all air-borne particles of size 0.3 micron and larger.</li> <li>• Capacity should be operate with minimum noise level.</li> <li>• Pre filter of dry fiber washable type with frame.</li> <li>• Velocity of HEPA is 90+/-20FPM.</li> <li>• Using a dynamic machine, the blower and motor assembly should statically and dynamic balanced ISI MARKED Motor of ¼ H.P.</li> <li>• Normal working flourescent light, Static pressure, Manometer,U.V.light.</li> <li>• Height of the working table should provide comfortable “SIT DOWN” working position for the operator.</li> <li>• It should work on 220/230 volts AC supply.</li> <li>• Should be supplied with complete S. Steel table top.</li> <li>• Working Size: 3' X 2' X 2'</li> <li>• Size of HEPA Filter: 3' X 2' X 6"</li> <li>• No. of HEPA Filter: 1</li> <li>• Illumination: 1 X 20 w</li> <li>• Instrument should be provided with voltage stabilizer.</li> </ul>	One	21.12.2016

10.	<p><b><u>Electrophoresis with power supplies (Agarose):</u></b></p> <p><u>System should have following specifications:</u></p> <ul style="list-style-type: none"> <li>• Principal Material : Acrylic</li> <li>• Inner tank dimension : 215 x 141 x 55 mm</li> <li>• No. of trays : 130 x 130 mm - 1 No.</li> <li>• 130 x 65 mm - 2 Nos.</li> <li>• 65 x 60 mm - 4 Nos.</li> </ul> <p>No. of combs :</p> <ul style="list-style-type: none"> <li>• 18 Well Analytical Acrylic Comb 1.5 mm thick x 1 No.</li> <li>• 13 Well Analytical Acrylic Comb 1.5 mm thick x 1 No.</li> <li>• 8 Well Analytical Acrylic Comb 1.5mm thick x 3 Nos.</li> <li>• 1.5 mm thick x 4 Nos. 3 Well.</li> <li>• Preparative Acrylic Comb: 3 mm thick x 1 No.</li> <li>• With Electrophoresis Power Supply: Digital PS 100: EPS 300 Model; 0-300 V; 0-100 mA;</li> </ul>	One	21.12.2016
11.	<p><b><u>Hot Plate:</u></b></p> <p><u>System should have following specifications:</u></p> <ul style="list-style-type: none"> <li>• 8” Dia Round Hot Plate with outer M.S. Body duly powder coated with S.S. Top. To work on 220/230 volts A.C. supply. Useful for continues heating up to 350<sup>0</sup> C.</li> </ul>	One	21.12.2016
12.	<p><b><u>Water Bath (Digital):</u></b></p> <p><u>System should have following specifications:</u></p> <ul style="list-style-type: none"> <li>• Double Walled constriction with inner chamber made stainless steel &amp; Outer made of Mild Steel duly Powder Coated. S.S. Top having 75mm Holes with Concentric Rings.</li> <li>• Temperature Range: upto 95<sup>0</sup> C.</li> <li>• Digital Temperature Controller with and accuracy of <math>\pm 1^0</math> C.</li> <li>• Working size: 325 x 250 x 100mm, 6 Hole of 75mm Dia.</li> </ul>	One	21.12.2016
13.	<p><b><u>Dry Bath:</u></b></p> <p><u>System should have following specifications:</u></p> <ul style="list-style-type: none"> <li>• This is a solid block heated unit with provision for different samples at a time.</li> <li>• All the sample are heated at 150<sup>0</sup>C within <math>\pm 1\%</math> accuracy with utmost uniformity of temperature. These are fitted with microprocessor based PID Temperature controller.</li> <li>• Heating Block Type, temperature range from 5<sup>0</sup> C above and ambient to 150<sup>0</sup> C <math>\pm 1^0</math>C, operate on 230 volts, 50Hz, single phase.</li> <li>• Capacity: up to 24 Samples.</li> </ul>	One	21.12.2016



14.	<p><b><u>pH Meter:</u></b></p> <p><u>System should have following specifications:</u></p> <ul style="list-style-type: none"> <li>• 3/4/5 point calibration for pH.</li> <li>• pH Range : 0 – 14</li> <li>• 0.001 pH Resolution.</li> <li>• mV Range : 0 - +1999.9</li> <li>• 0.1 mV resolution.</li> <li>• Temperature compensation: Auto / Manual.</li> <li>• Readout: 2 Line 20 character alphanumeric LCD.</li> <li>• Data storage: 80 Readings.</li> <li>• Printer interface for 80 Column D.M. Printer.</li> </ul>	One	21.12.2016
15.	<p><b><u>Portable Autoclave:</u></b></p> <p><u>System should have following specifications:</u></p> <ul style="list-style-type: none"> <li>• Electrically heated complete with stand single walled with stainless steel body along with essential parts like Pressure gauge, safety etc.</li> <li>• Outer, Inner &amp; Lid is made of Stainless steel.</li> <li>• The Chamber is absolutely leak proof.</li> <li>• It is provided with safety valve, pressure gauge, steam release valve, and vacuum release valve.</li> <li>• Capacity: 20 Ltrs. Approx.</li> <li>• Size: 300 x 300 mm.</li> <li>• Additional 1 Nos. heating coil should be provided as spare part.</li> </ul>	One	21.12.2016

**Important date and Time:**

(i) Last date and time of receipt of Tender: **21.12.2016, 1200 HRS**

(ii) Due date & time of opening Tender: **21.12.2016, 1400 HRS**

(iii) Venue of Bid opening: **Department of Microbiology, Assam University Silchar**

1. The tenders complete in all respects should be addressed to **Dr. Diwakar Kumar, PI, DBT Twinning Project, Department of Microbiology, Assam University, Silchar-788011, ASSAM.**
2. The tenderers for equipments must submit the bid(s) in two-bid system (Technical and Financial).
3. Tenders by e-mail, Fax, Telex, Telegram will not be accepted. Tenders must be submitted in sealed envelope only clearly indicating **“TENDER FOR ITEMS FOR DBT Twinning/Microbiology-2016”**
4. In case of any modification in specifications / terms and conditions / any clarification to the bid document, it will be hosted in the university website only and the bidders are requested to log to our website from time to time and no separate corrigendum will be issued in this regard.
5. The rate should be exclusive of taxes and applicable tax should be clearly indicated.
6. The rates should be quoted along with supporting documents of specifications, technical features, list of users and authorized dealership documents (if applicable).
7. Details of availability of after sales support will have to be furnished.
8. **The university is exempted from paying Customs and Excise duty.**
9. Proprietary items should be quoted with sole Manufacturer / Dealership certificate. Without dealership or manufacturer’s certificate no bids will be accepted.
10. No advance payment will be made. However, if items are of foreign origin, advance payment can only be made in the form of vide **LOC/FDD/Wire Transfer. Performance Bank Guarantee may be submitted as per rules covering warranty period.**
11. Items of foreign origin should have insurance up to installation site.
12. If any item / equipment delivered in damaged condition, the equipment should be replaced with new one immediately.
13. In case of equipment of foreign origin, the Indian agent should submit one undertaking in nonjudicial stamp paper, stating that if any equipment delivered in damaged condition they will be liable to replace the same with a new one **(applicable only when order is placed).**
14. The university reserves the right to accept or reject any or all the bids without assigning any reason whatsoever.

Sd/-  
Dr. Diwakar Kumar  
PI, DBT Twinning Project  
Department of Microbiology  
Assam University, Silchar – 788 011, INDIA

**Copy to:**

1. Copy to Secretary to VC, AUS for VC’s kind information.
2. The Head, Department of Microbiology, AUS.
3. The Registrar, AUS.
4. The Finance Officer, AUS.
6. Director, Computer Center with request to upload the tender/ notification.
7. File for record.

## PROFORMA FOR SUBMISSION OF TECHNICAL BID (TB)

From

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To,

Dr. Diwakar Kumar  
PI, DBT Twinning Project  
Department of Microbiology  
Assam University, Silchar – 788 011, India

With reference to your advertisement dated published in the Newspapers and posted at Assam University Website, I/ We hereby submit the Technical bid for the \_\_\_\_\_ required by you. I / We confirm that I / We are the owners / authorized person to offer you the item as per the desired specifications.

### 1. Refrigerated Centrifuge:

Serial no.	Technical Specification	Details to be filled by offerer
1.	RCF:	
2.	RPM:	
3.	Acceleration time:	
4.	Deacceleration time:	
5.	Soft ramp function for adjustable for rotor acceleration and braking slowly (Y/N):	
6.	Timer:	
7.	Noise level:	
8.	Wide temperature range:	
9.	System should able to store how many routine procedures and no. of programmable buttons.:	
10.	Built-in condensation drain to eliminate water accumulation and prevent corrosion (Y/N):	
11.	Automatic RPM to RCF conversion (Y/N).:	
12.	Able to maintain 4 °C at max. Speed (Y/N).:	
13.	Short Spin Function (Y/N):	
14.	Set RPM" function - time count starts after reaching the set rpm (Y/N).:	

15.	Fast Temp function - to start a temperature control run directly (Y/N):.	
16.	Fast Temp pro function - to start a temperature control run with defined start time (Y/N):.	
17.	ECO Shut off Function to reduce energy (Y/N):.	
18.	Built in condensation drain to eliminate water condensation (Y/N):.	
19.	Automatic imbalance detection, over speed detection and temperature protector (Y/N):.	
20.	Quick lock technology for quickly opening and closing the rotor lid (Y/N):.	
21.	Standby cooling function to hold temperature when centrifuge is not in use (Y/N):.	
22.	Dynamic Compressor Control (DCC) technology for optimized cooling performance (Y/N):.	
23.	Power supply:	
24.	Dimension (WxDxH):	
25.	Swing out bucket rotor with adapter for 15 ml conical tubes & Falcon tubes 16 nos, and adapter for 50 ml conical tubes & Falcon tubes 4 nos, max speed of 5000 RPM and RCF of 4500 X g (Y/N):.	
26.	Fixed Angled Rotor aerosol tight 30 X 1.5/2.0 ml rotor with max RPM of 14000 and RCF of 20800xg (Y/N):.	
27.	Maximum capacity: Fixed angled 48X1.5/2.0 ml, 6X85 ml rotor with adapter of 15/50 ml Falcon/Conical tubes, swing out rotor 4X250 ml tubes for 10XMTP & 2XDWP rotors (Y/N):.	
28.	Power supply:  Power requirement:  Dimension (WxDxH):  Voltage stabilizer:	
29.	European CE certified/ USFDA and should possess an IVD conformity (Y/N):.	

## 2. - 80°C Freezer (Upright):

Serial no.	Technical Specification	Details to be filled by offerer
1.	Microprocessor-controlled temperature facility and alarms with non-volatile memory (Y/N):	
2.	Capacity/Storage Capacity:	
3.	Compartment:	
4.	Vent Plunger to prevent vacuum formation, Keyed lock, polished 304L stainless steel interior, exterior: 18 gauge steel, 1.2 mm thick, powder coated, scratch and rust resistant (Y/N):	
5.	Programmable temperature range:	
6.	Display:	
7.	Power consumption:	
8.	Automatic Reset, Automatic Restart with Non-Volatile memory, programmed Restart (Y/N):	
9.	Hermetically-sealed two-stage cascade refrigeration system with CFC, HCFC free refrigerants (Y/N):	
10.	Battery Back up:	
11.	Compressor:	
12.	Unique 4-digit Password to prevent unauthorized changes (Y/N):  Lock and Key:  Lockable security plate:  Door latch:  Inner doors:  Cabinet & Door seals:	
13.	Audible alarm:  Visual alarm:  Remote alarm contacts (Y/N):	
14.	Internal Dimensions:  External Dimensions:	
15.	S.M.A.R.T. Plus™ Diagnostic Software to trace and solve system errors (Y/N):	
16.	CE Certified and UL Certified (Y/N):	
17.	Voltage stabilizer:	

### 3. Gel Documentation:

Serial no.	Technical Specification	Details to be filled by offerer
1.	Image resolution:	
2.	Efficiency:	
3.	4.6 x 4.6 µm pixel size & >3.0 orders of linear dynamic range (Y/N):	
4.	Completely automatic & user does not have to zoom, focus, adjust aperture or select light source (Y/N):	
5.	Modular with different sample trays & flexible to image a wide variety of applications, including nucleic acid, visible dyes, SYBR safe and Stain Free Gels (Y/N):	
6.	UV, White light, & optional Blue light (Y/N):	
7.	Stain-Free capability for stain-free gels and blots (Y/N):	
8.	One emission filter with 3 optional to accommodate a large portfolio of detection methods: ethidium bromide, SYBR® Green, SYBR® Safe, SYBR® Gold, GelGreen, GelRed, Fast Blast™, SYPRO Ruby, Flamingo™, Oriole™, CY3, rhodamine, green fluorescent protein, Hoechst, Krypton, silver stain, copper stain, zinc stain, Coomassie Brilliant Blue, Coomassie Fluor Orange, and other spectrally similar stains, labels, and dyes (Y/N):	
9.	Lens flat-fielding calibration for each sample tray to deliver image data that are always optimized and reproducible without imaging artifacts, providing superior image uniformity and quantitation (Y/N):  Detector:	
10.	<p><b><i>Gel Doc System Software-</i></b></p> <ul style="list-style-type: none"> <li>• Software should have highest level of automation in hardware calibration, image optimization, capture, and analysis (Y/N):</li> <li>• Automated workflow recorded in a protocol file from image capture to results thus eliminating need for training (Y/N):</li> </ul>	

	<ul style="list-style-type: none"> <li>• Should allow 100% repeatability of the workflow by any user and ensures optimized image data and analysis from a gel in a single uninterrupted, fast, and completely reproducible workflow (Y/N):</li> <li>• Should have automated image capture driven by a selected gel or blot application (Y/N):</li> <li>• Should have one-button acquisition from image capture to result (Y/N):</li> <li>• Should generate the publication ready images (dpi, dimension and format) with one click export option (Y/N):</li> <li>• Should generate customizable reports (Y/N):</li> <li>• Should have feature for Automatic print when only imaging and printing is required (Y/N):</li> <li>• Software should have easy copy/paste functionality, crop, zoom, 3D and colors (Y/N):</li> <li>• Should be supplied with a suitable PC/ Laptop (Y/N):</li> </ul>	
11.	Voltage stabilizer:	

#### **4. PCR (Gradient Thermal Cycler):**

<b>Serial no.</b>	<b>Technical Specification</b>	<b>Details to be filled by offerer</b>
1.	Gradient Thermal Cycler with Peltier heating and cooling based system (Y/N):	
2.	Dual block of 2 x 48 x 0.2ml which can be independently controlled (Y/N):  The dual block should also have gradient capability which can be independently controlled for both the blocks at different times (Y/N):  Dynamic gradient technology (Y/N):  A 16 gradient should be possible using both the blocks (Y/N):	
3.	Option to add 96 X 0.2 ml Block or 384 Well Block. All the blocks should have the gradient capability (Y/N):	
4.	Maximum ramp rate of 4 degC/second (Y/N):  Adjustable heated lid (Y/N):	
5.	Protocol auto writer (Y/N):	
6.	Temperature range:	
7.	Temperature uniformity range:	
8.	Gradient range:	
9.	Display and protocol transfer:	
10.	Should be capable of connecting upto 32 PCR/Real Time PCR and can be operated using a PC or directly from the PCR system (Y/N):	
11.	Memory:	
12.	Upgradeable to a 6 Channel Real Time PCR with gradient capability (Y/N):	
13.	O-ring seal to protect thermal electric modules (Y/N):	
14.	Licensed for Research and IVD Applications (Y/N):	
15.	Voltage stabilizer:	



### 5. Sonicator:

Serial no.	Technical Specification	Details to be filled by offerer
1.	Expandable programme of ultrasonic homogenizers and Sonicator should disrupt yeasts, bacteria and it must homogenize cells from tissue cultures. It should disrupt macromolecules such as DNA, RNA etc with ultrasound and it should generate emulsions or dispersions (Y/N):	
2.	<p>Its high efficiency should ensure that samples are rapidly disintegrated – the isolation of DNA, RNA and proteins is made more efficient than when using hand homogenizers (Y/N):</p> <p>The instrument includes an integrated sound abating chamber with height adjustable sample table (Y/N):</p> <p>In addition you can reduce the use of enzymes, which would otherwise be needed for lysing the cells (Y/N):.</p>	
3.	<p>If connected to a PC, even the energy input into the sample should be monitored (Y/N):.</p> <p>It should be convenient, handheld instrument that allows fast sonication with a maximum of 100 W output (Y/N):.</p>	
4.	<p>Various/ Different probes available (dia in mm):</p> <p>Application range should be between 10 µl with the 0.5 mm dia probe and 750 ml maximum with the 10 mm dia probes (Y/N):</p>	
5.	<p>Operating frequency:</p> <p>Output: max.:</p> <p>Output settings:</p> <p>Duty cycle (pulsed operation):</p> <p>Power consumption:</p>	
6.	<p>Setting times:</p> <p>PC-connection:</p> <p>Operating temperature:</p> <p>Limits of humidity:</p> <p>Line voltage:</p> <p>External dimensions (W x H x D):</p>	

7.	Voltage stabilizer:	
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**6. UV-Visible Spectrophotometer:**

Serial no.	Technical Specification	Details to be filled by offerer
1.	UV/VIS spectral range:  System should be with Freely Selectable wavelengths across the entire spectral range (Increment 1 nm) (Y/N):.	
2.	System should have Xenon Flash lamp with Very long line life (Y/N):.	
3.	Spectral bandwidth:	
4.	Random error absorption details:  Systematic error details:	
5.	Display:	
6.	CMOS Photodiode array for beam receiver absorption (Y/N):.	
7.	Light path height:	
8.	Method memory:	
9.	System should have help box with explanation of each individual steps in 5 languages (Y/N):	
10.	Microscope should be compatible with microliter measuring cells and standard cuvettes (Y/N):.	
11.	Microscope should be integrated application and result memory (Y/N):.	
12.	Microscope should have USB interface to connect to PC if required (Y/N):.  Microscope should have RS 232 interface (Y/N):.	
13.	System should be supplied with 200 nos of disposable cuvettes with UV and Vis range 220-1600 nm with dual path length of 2mm and 10 mm (Y/N):.  System should be quoted with micro volume measuring cell as optional (Y/N):.  Voltage stabilizer (Y/N):.	

## 7. Light Microscope:

Serial no.	Technical Specification	Details to be filled by offerer
1.	Microscope stand with Right Hand Stage with Koehler Illumination, Add on lens for condenser, 5 Position Nosepiece, Universal Power Supply, mechanical stage with non-extending rack and slide holder, LED illumination, Auto off, built in handle and cord wrap, Dust Cover (Y/N):	
2.	Contrasting technique:	
3.	Infinity corrected & Harmonic Compensated (HC) Optical System (Y/N):	
4.	30 degree Trinocular Tube with locking mechanism for eyepieces along with 10x eyepiece pair with 20 mm. field of view (Y/N):	
5.	Condenser Achr.apl. A 0.9 (P) with switchable condenser head, with color coding for fast and easy adjustment of the aperture diaphragm, for brightfield and polarisation (qualitative), optional equipment for darkfield and phase contrast available, with slot for sliders (Y/N):	
6.	Plan Achromat Objective set 10x/0.25 PH1, 20x/0.40 PH1, 40x/0.65 PH2, 100x/1.25 OIL PH3 (Y/N):	
7.	Microscope Should be supplied with a suitable PC/ Laptop (Y/N).	
8.	Digital color camera with CMOS sensor (1/2)"": <ul style="list-style-type: none"> <li>• Stand alone operation without any PC possible (Y/N):</li> <li>• High definition live image 1920x1080p, 30fps (Y/N):</li> <li>• JPG images with max.10 Mpixels (Y/N):</li> <li>• MP4 movie clips with max. 2 Mpixels(Y/N):</li> <li>• Camera control via computer (PC mode) or via remote control RC2 (HD mode) (Y/N):</li> <li>• Capture of JPGs or MP4s directly to SD card or to PC using LAS, LAS-EZ or Acquire (Mac) (Y/N):</li> </ul>	

	<ul style="list-style-type: none"> <li>• USB2 connection, compatible with PCs and notebooks (Y/N):.</li> <li>• Camera kit includes MC190 HD camera, USB2 cable 1.5m, HDMI cable 2.5m, Power Supply 5V, RC2 remote control SD Card, Leica software for use with PC or Mac (Y/N):.</li> <li>• Supported OS: Win7/ Win8/ MacOSX or latest (Y/N):.</li> <li>• Recommended c-mount adapter 0.5x/0.55x. (Y/N):.</li> </ul> <p>Microscope, Camera &amp; Software should be from the same manufacturer for better compatibility (Y/N):.</p> <p>Voltage stabilizer:</p>	
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**8. -20° C Freezer (Vertical):**

Serial no.	Technical Specification	Details to be filled by offerer
1.	Temp Range: Capacity: No. of Door/Type: Dimension : Storage Type: Wheels: Tropical zed at: Body Insulation: A+ Category – Low Power Consumption 0.78 unit/ 24 Hrs (Y/N): Lock & Digital Temperature Display: Voltage stabilizer:	

**9. Laminar Air Flow:**

Serial no.	Technical Specification	Details to be filled by offerer
1.	<p>The cabinets should be fabricated out of thick board duly sunmica clad (Y/N):</p> <p>The interior surface should be epoxy painted for its longer life (Y/N):</p> <p>The work table should be made of thick board pasted in S.S. lined at top (Y/N):</p> <p>Side panels should be made out of thick transparent plexi glass duly framed (Y/N):</p> <p>The unit should be fitted with pre-filter and is made to pass through highly effective HEPA filters having efficiency rating as 99.99% with cold DOP and 99.97% with hot DOP, retaining all air-borne particles of size 0.3 micron and larger (Y/N):</p> <p>Capacity should be operate with minimum noise level (Y/N):</p> <p>Pre filter of dry fiber washable type with frame (Y/N):</p> <p>Velocity of HEPA:</p> <p>Using a dynamic machine, the blower and motor assembly should statically and dynamic balanced ISI MARKED Motor of ¼ H.P (Y/N):</p> <p>Normal working flourescent light, Static pressure, Manometer, U.V.light (Y/N):</p> <p>Height of the working table should provide comfortable "SIT DOWN" working position for the operator (Y/N):</p> <p>Power supply:</p> <p>Should be supplied with complete S. Steel table top (Y/N):</p> <p>Working Size:</p> <p>Size of HEPA Filter:</p> <p>No. of HEPA Filter:</p>	

	Illumination:	
	Voltage stabilizer:	

**10. Electrophoresis with power supplies (Agarose):**

Serial no.	Technical Specification	Details to be filled by offerer
1.	Principal Material : Acrylic  Inner tank dimension : 215 x 141 x 55 mm  No. of trays : 130 x 130 mm.: 130 x 65 mm: 65 x 60 mm:  No. of combs : <ul style="list-style-type: none"> <li>• 18 Well Analytical Acrylic Comb 1.5 mm thick x 1 No (Y/N):.</li> <li>• 13 Well Analytical Acrylic Comb 1.5 mm thick x 1 No (Y/N):.</li> <li>• 8 Well Analytical Acrylic Comb 1.5mm thick x 3 Nos. (Y/N):.</li> <li>• 1.5 mm thick x 4 Nos. 3 Well (Y/N):.</li> <li>• Preparative Acrylic Comb: 3 mm thick x 1 No(Y/N):.</li> </ul> With Electrophoresis Power Supply: <ul style="list-style-type: none"> <li>• Digital PS 100:</li> <li>• EPS 300 Model; 0-300 V; 0-100 mA:</li> </ul>	

**11. Hot Plate:**

Serial no.	Technical Specification	Details to be filled by offerer
1.	Hot Plate 8” Dia Round with Digital temperature Controller (Y/N):  Body duly powder coated with S.S. Top (Y/N):  To work on 220/230 volts A.C. supply (Y/N):  Continuous heating up to:	

### 12. Water Bath (Digital):

Serial no.	Technical Specification	Details to be filled by offerer
1.	<p>Double Walled constriction with inner chamber made stainless steel &amp; Outer made of Mild Steel duly Powder Coated (Y/N):</p> <p>S.S. Top having 75mm Holes with Concentric Rings (Y/N):</p> <p>Temperature Range:</p> <p>Digital Temperature Controller with and accuracy of <math>\pm 1^{\circ}\text{C}</math> (Y/N).</p> <p>Working size: ,</p> <p>Hole:</p> <p>Temperature Display:</p>	

### 13. Dry Bath:

Serial no.	Technical Specification	Details to be filled by offerer
1.	<p>It should be solid block heated unit with provision for different samples at a time (Y/N):</p> <p>Sample should be heated at <math>150^{\circ}\text{C}</math> within <math>\pm 1\%</math> accuracy with utmost uniformity of temperature. These should be fitted with microprocessor based PID Temperature controller (Y/N):</p> <p>Heating Block Type, temperature range from <math>5^{\circ}\text{C}</math> above and ambient to <math>150^{\circ}\text{C} \pm 1^{\circ}\text{C}</math>, operate on 230 volts, 50Hz, single phase (Y/N):</p> <p>Capacity (Y/N):</p>	

**14. pH Meter:**

Serial no.	Technical Specification	Details to be filled by offerer
1.	3/4/5 point calibration for pH (Y/N):  pH Range :  0.001 pH Resolution (Y/N):  mV Range :  0.1 mV Resolution (Y/N):  Temperature compensation:  Readout:  Data storage:  Printer interface for 80 Column D.M. Printer (Y/N):	

**15. Portable Autoclave:**

Serial no.	Technical Specification	Details to be filled by offerer
1.	Electrically heated complete with stand single walled with stainless steel body along with essential parts like Pressure gauge, safety Etc (Y/N):  Outer, Inner & Lid is made of Stainless steel (Y/N):  The Chamber is absolutely leak proof (Y/N):  It is provided with safety valve, pressure gauge, steam release valve, and vacuum release valve (Y/N):  Capacity:  Size:  Additional 1 Nos. heating coil should be provided as spare part (Y/N)	

Date:

OFFICE SEAL

(Signature of the Offerer)



**(This format shall be sent in a separate sealed cover super scribing - "Technical BID FOR EQUIPMENTS FOR DBT/Microbiology-2016").**

**PROFORMA FOR SUBMISSION OF FINANCIAL BID (FB)**

From

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 .....

To,  
 Dr. Diwakar Kumar  
 PI, DBT twinning Project  
 Department of Microbiology  
 Assam University, Silchar – 788 011, India

Having read and understood the Technical bid, I am/ We are furnishing the desired information and submitting our Technical Bid duly signed by our Authorized person. Now we hereby submitting (in separate sealed cover) our Financial Bid for the purchase of equipments.

<b>Serial no.</b>	<b>Specification of Items</b>	<b>Details to be filled by offerer</b>
<b>1.</b>	Refrigerated Centrifuge/ -80°C Freezer / Gel Documentation / PCR/ Sonicator/ UV-Visible Spectrophotometer/ Light Microscope/ -20°C Freezer (Vertical)/ Laminar Air Flow/ Electrophoresis with power supplies/ Hot Plate/ Water Bath/ Dry Bath/ pH Meter/ Portable Autoclave.	Price in INR /\$/Other currency whichever is applicable (Please mention separately the price of the each items, accessories, insurance, etc. under separate heads)
<b>2.</b>	Applicable taxes	To be included
<b>3.</b>	FOR Silchar	To be included
<b>4.</b>	Special Offer/ Discount	To be included
<b>5.</b>	Grand Total	Price in INR /\$/Other currency whichever is applicable
<b>6.</b>	Terms and condition	As applicable
<b>7.</b>	Warranty and after sales service	As applicable
<b>8.</b>	Banking Details	To be included

Date:

OFFICE SEAL

(Signature of the Offerer)

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