

TENDER DOCUMENT

FOR

**Supply of Civil/Electronics and  
Communication/Biotechnology Lab equipemtn.**

Last Date for selling of the  
the tender document : ....., 2010

Last date and time for submission  
of tender document : ....., 2010 upto 1600 hrs

Opening of the Bid : ..... 2010 at 1100 hrs

**SERIAL NUMBER** :  
**ISSUED TO** :  
**DATE** :



BABA GHULAM SHAH BADSHAH UNIVERSITY RAJOURI,

JAMMU AND KASHMIR

Phone 01962-241009,

Website: [www.bgsbuniversity.org](http://www.bgsbuniversity.org),

Email: [bgsbu@rediffmail.com](mailto:bgsbu@rediffmail.com)



**BABA GHULAM SHAH BADSHAH UNIVERSITY  
RAJOURI (J&K)**

**TENDER FORM**

(Tender Notice No: BGSBU/Estates/10/ 3593, Dated:19.06.2010)

1. Name of the Tendering Firm : .....
2. PAN No. : .....
3. Service Tax Registration No : .....
4. Experience in providing Lab. Equipment to Universities/Govt. Institutions: .....Year  
.....Month(s) (*Attested copies of the relevant certificates must be enclosed*)
5. Details of the experience as mentioned in S.N.4 above.

S.No	Name and address of University/ Govt. Institutions	From	To
1			
2			
3			
4			
5			
	<b>Total</b>		

6. Turnover last three years :  
(Enclose preferably audited copies of Loss/Profit A/C)

Year 2007-08 Rs.....

Year 2008-09 Rs.....

Year 2009-10 Rs.....

7. Declaration of tendering Firm :

I/We M/S .....Tendering firm for .....  
.....(Lab. Equipment) in the BGSB University, do hereby solemnly affirm that we shall  
abide by the University rules/conditions of the contract. I/We are aware that the BGSB University  
reserves right to cancel any/all of the tenders without any obligation for explaining the reasons of the  
decision of cancellation. I/We also understand that the BGSB University is the final authority to decide  
any dispute arisen out of the tender process in question

Signature of the Tenderer :

Address of the Tenderer (with seal) :



## Baba Ghulam Shah Badshah University, Rajouri

### Short Term Tender Notice

For and on behalf of Registrar BGSB University, sealed tenders affixed with Rs. 5/- revenue stamp are invited from Registered Firms, Authorised Dealers, Distributors & Manufacturers for supply of **Equipment** for following **laboratories**:

- i) Civil Engineering**
- ii) Electronics & Communications Engineering**
- iii) School of Biosciences & Biotechnology.**

The detailed tender document can be had from the office of the Assistant Registrar (Estates) BGSB University, Rajouri on payment of Rs 1000/- in the shape of Bank Draft favouring Registrar BGSBU, Rajouri, payable at Rajouri. The tender document can also be downloaded from the University website i.e [www.bgsbuniversity.org](http://www.bgsbuniversity.org). Tender document downloaded from the University website shall be accepted with bank draft of Rs. 1000/- towards the tender cost. The tender should be submitted in two separate envelopes (Technical Bid & Price Bid) & both envelopes should be sealed in a single larger envelope.

Completed tender should reach the office of the Registrar BGSB University, Rajouri, on or before 30<sup>th</sup> June, 2010 along with Earnest Money of Rs. 10,000/-for each group/ Lab. (*without which the tender shall not be entertained*). Tenders should be opened by the committee in presence of tenderers who wish to be present on a date to be notified separately.

No:-BGSBU/Estates/10/ 3593  
Dated:19.06.2010

Sd/-  
Assistant Registrar  
(Estates)

### **Details/Requirements for Submission of Tenders:**

The Competitive Bidding shall be held in accordance with two cover bidding system i.e. Cover-A (Technical/Pre-qualification Bid) and Cover-B (Price Bid).

The tenders are to be furnished in two sealed covers (Cover-A and Cover-B) duly signed by the tenderer clearly superscribing the following information on them:

- Envelope No (Cover-A or Cover-B)
- Name of Work
- Name and Address of Tenderer with phone numbers
- Due date of receipt of tenders.

### **Cover-A (Technical/Pre-qualification bid):**

This Envelope should contain the following information:

- i) Earnest money deposit in the form of CDR for an amount of 10,000/- for each Lab./group, issued by any scheduled bank.
- ii) Product catalogues, information brochures etc. should be enclosed with the pre-qualification bid.
- iii) Attested photocopies of latest and valid sales tax, Service Tax and Income Tax clearance certificates including PAN/TIN documents.
- iv) Details of works of similar nature/type and magnitude carried out by the tenderer, documentary proof.
- v) Any other relevant information with regard to specific work which the tenderer would like to present.
- vi) Each page of the documents submitted should be duly signed by the tenderer or his authorized signatory.

### **Cover-B (Price Bid):**

The Cover-B should contain:

- i) The rates quoted for the tendered items should be duly pasted with transparent tape.
- ii) The rates quoted should be inclusive of all relevant taxes, octroi, freight, handling charges and/or other duties and overheads etc.
- iii) The tenderer should quote the rates for all the items as per advertised list/quantity schedule/unit and not for any part of the items or otherwise.
- iv) Each page of the submitted price bid must duly be signed by the tenderer or his authorized signatory.
- v) This envelope should contain only the cost offer of the tenderer which should be written clearly and legibly, both in figures and words. The tenderer should not quote in any case the cost offer anywhere directly or indirectly in envelope-A.

The aforesaid sealed envelopes (Cover-A and Cover-B) shall then be put together in another envelope which shall also be sealed and superscribed with the name of the work.

### GENERAL TERMS AND CONDITIONS:

1. The tenderer should submit rates and technical specifications of each item listed in the bill of quantities. The number of items will be need based and can change without assigning any reason thereof.
2. The agency should submit the complete tender with an earnest money of Rs. 10,000/- (must be issued separately for each Lab./group) in the shape of CDR. Tender received without CDR shall be rejected.
3. The items are required to be supplied F.O.R BGSB University Campus, Rajouri.
4. The agency is required to quote clearly for each item being quoted. The agency should quote based on the price list of the respective company (original manufacturer) and should offer a discount, if any, on the price list of the company.
5. The rates to be quoted by the agency should be valid for one year from the date of the placement of order (for Rate contract) & same should be clearly mentioned in their technical offer.
6. The agency/tenderer should quote the rates of the items in figures as well as in words.
7. Conditional tenders shall not be accepted. This tender document is non-transferable. Bid once submitted shall not be allowed to withdraw; failing which the Earnest Money Deposit shall be forfeited.
8. All corrections or alterations in the quotation must be duly countersigned by the authorized signatory, without which tender will not be considered.
9. Tenders can be submitted either **by post or by hand**. In the event of tender received after due date and time due to postal delay, the University will not be responsible for such delay and such tenders/bids will not be considered by the University.
10. The tenders should be submitted with detailed Technical specification of each item as well as the rates in a sealed envelope super scribed with the type of items tendered for along with tender notice number & date, e.g. **“Tender for supply of Civil Engineering/Electrical and Communication Engineering / Biote3chnology Lab. equipment in response to Tender Notice No. BGSBU/Estates/10/ 3593, Dated: 19.06.2010.**

11. The University reserves the right to accept or reject any quotation at any time prior to award of contract, without thereby incurring any liability towards the affected Tenderer(s) or any obligation to inform the affected Tenderer(s) of the grounds for the University's action.
12. The Central Purchase Committee of the University will do the evaluation of the bids submitted by the bidding agencies on the specified date. Rates of the technically successful tenderers which will be compared and ranking of the tenderers will be done according to the price quoted.
13. University shall be under no obligation to accept the lowest or any other quotation received in response to this tender notice and shall be at liberty to reject any or all offers including those received late or incomplete without assigning any reason whatsoever.
14. The University reserves the right to accept or reject any quotation or reject all quotations at any time prior to award of contract, without thereby incurring any liability towards the affected Tenderer(s) or any obligation to inform the affected Tenderer(s) of the grounds for the University action.
15. The supply of items has to be made within a period of 15 days from the date of issue of supply order by the BGSBU. In case firm fails to supply articles within the specified time, 0.5% cost of the whole supply for every week as late supply will be deducted from the bill to the maximum of 5% after which the order will be cancelled and earnest money deposited shall be forfeited.
16. In case the tenderer wants to be represented by someone authorized by him to follow up the tendering process/procedures and act on his behalf, he shall submit a duly executed power of attorney in original in the name of such representatives/s along with its two certified copies. The power of attorney shall also include the power to refer disputes to arbitration.
17. Any change in design/specifications found necessary during execution/installation, shall be undertaken by the tenderer on the same rates, terms and conditions as provided for such items. The rate for any extra item, if undertaken, shall be analyzed and approved by the Competent Authority. The same shall be bidding on the tenderer.
18. As soon as the acceptance of the tender is communicated to the successful tenderer, the contract shall be complete and bidding upon him. A formal deed/agreement shall be drawn by the tenderer within one week from the date of issue of allotment. If the tenderer back out after the allotment or sublets the work

or a part thereof, it will be considered a breach of contract and the tenderer will be dealt with under rules in vogue from time to time.

19. The tenderer shall complete the work to the entire satisfaction of the Project Authority or other designated officer for the purpose. Any item/s found unsatisfactory shall have to be replaced by standard items as laid down in tender document.
20. The successful tenderer to whom the work gets allotted shall provide on site warranty, as per manufacturer's policy for all the products equipment etc supplied, installed or commissioned. This warranty shall however not be less than one year in any case.
21. If the work is suspended by the project authority for any reason for some time, no compensation on this account shall be entertained. However, an extension in completion time may be granted in such case purely at the discretion of the Project authority. However, price escalation for such delay shall not be entertained.
22. Any clarification required by the tenderer in regard to the technical data given in tender document may be sought from the Office of the Registrar or Dy. Registrar (HR&P), BGSBU, Rajouri.
23. The University shall not be responsible for any loss due to flood, earthquake, mutiny, violence, riot or other government action or other natural calamity etc to the men or material engaged by the tenderer during execution of work. In case of injury/death of any skilled or unskilled labour employed by the tenderer on the work, the tenderer himself shall be responsible for consequences and compensation thereof under rules in vogue in the state.
24. On installation/commissioning/completion of the tendered work/s, a competent officer or agency designated/engaged by the University shall have to certify, that all works executed by the tenderer have been done to their satisfaction. Final payments against the works thus carried out shall be made only after such certificate is issued by the competent designated authority.
25. Disputes, if any, are subjected to the jurisdiction of Rajouri Courts.
26. The University reserves the right to alter/ modify any or all conditions of this tender document.
27. Tender which do not fulfill any or all of the above conditions or incomplete, are liable for rejection.

Sd/-  
Assistant Registrar  
(Estates)

**Bill of Quantities**

**Laboratory Equipment required by the University during 2010-1, for CoET & School of B&B**

**Tender Notice No.: BGSBU/Estates/10/3593, Dt.19.06.2010**

**EMD: Rs. 10,000/- (Must be submitted separately for each Lab./group)**

**a) College of Engineering & Technology**

S.No.	Name of the Equipment	Specifications	Quantity	Price per Unit (Including all taxes)
1.	Ductility Testing Machine (motorized)	The Apparatus consist of a water bath a thermostatic heater, and a circulating pump to maintain uniform water temperature. On half of the briquette moulds is fixed on a fixed plate in the water bath. The other half of the briquette mould is fixed to a carrer which slide over a rotating threaded shaft with a clutch. The motor and gears to rotate the shaft are housed in a cabinet fixed above the other and of the bath .A pointer fixed to the carrier moves over a scale graduated from 0-110 cm x 1mm fixed on the bath with "0" (zero) of the scale towards the fixed plate slides. The rotating shaft has 2 seeds of travel for the bracket, 5cm/min. and 1 cm/min., late slides. The rotating shaft has 2 speeds of travel of the bracket, selected by a clutch. Water bath inside is aluminum, it is an insulated water bath. Water bath is provided with a drain. A heater with thermostatic control is fixed inside the water bath control switches for motor, stirrer, heater and indicator lamps are fixed at a convenient place on the water bath. Complete with three briquette moulds and one base plate, all made of brass. Operates on 230 Volts A. C single phase. Accessories: 1. Thermometer IP 38 C, range 23c <sup>0</sup> to 27c <sup>0</sup> . 2. Ductility mould with base plate.	1	
2.	Trail Test Outfit/Apparatus	One loading unit, for single unit, cellmounting, capacity 5 tonnes. Hand Operated. The loading unit is supplied with one dial guage bracket. One dial guage 0.01mm x 25mm for strain measurement. One high sensitive roving Ring, capacity 200/250 kg with Calibration report and carrying case. Supplied with motorized load frame 5000 kgf(floor model), giving the following six rates of strain 1.25,0.25,0.01,0.002,0.0004 mm/min.The load frame operates on 230Volts A.C.		

3.	Los Angles Abrasion Testing Machine	Apparatus, Motorised, Three Speed	1	
4.	Laboratory Cement Autoclave (digital)	Stainless steel chamber (21kg/cm <sup>2</sup> pressure) dimensions 10.5cm diameter x 40.5cm height suitable for operation on 230v, 50hz single phase AC supply complete with Testbar holder, rack to hold specimen.	1	
5.	Torsion Testing Machine	Suitable for torsion, twist, torque, various metals, rods, wires & flats. Torque by dynameter system, Auto Torque selector to adjust range, general motor to apply torque, autographic records for relation between torques & twist angle. Accuracy $\pm 1\%$ max. Torque 200nm, Torque range 2080m speed 1.5 rpm, clearance between grip 0-400 grip size 10-15.	1	
6.	Brienell Hardness Tester	Suitable for testing alloys, (hard, soft, flat round or irregular) automatic setting of dual guage. Fitted with a hydraulic pack and control circuit, optical device with 14 x magnification with .01mm accuracy conforming to IS: 1181-1968, BS:240 or ASTM: E-10	1	
7.	BOD Incubator	605 x 605 x 605 mm	1	
8.	Muffle Furnace(200x200x450mm)	200 x 200 x 450 mm	1	
9.	Remote Sensing & Geographic Information System	Having 30x magnification with 0.5" least count and 2" Accuracy, distance least count normal mode 1mm, precise mode 0.1 mm, Distance with single prism 2000m, distance accuracy +2 mm + 2ppm, dual Axis compensator +3' alphanumeric keyboard (Dual Display), Shortest Focus Distance 1.1m, Touch Screen, 32 Bit CPU, Graphic User Interface, Graphical Display, one board survey Software, internal memory with laser plummet 16 M along with all standard accessories:- Ni- MH Battery (02 nos.) Battery Charger (01 No.), Data Downloading Software (01 No.) Heavy Duty Wooden tripod (01 No.), prism (Reflector) along with target & Holder (01 No.), Single Prism Pole including Bipod (Stand) (01 No.), Operation Manual (01 No.), tool Kit (01 No.).	1	
10.	Theodolite(EDM/DTS)/Trasit Theodolite	Having 30x Magnification with 1" least Count and 2" Accuracy, Distance least count normal mode 1mm, distance with single prism 1800m, Distance accuracy +3mm + 2ppm, Single axis compensator +3' Alphanumeric Keyboard (Dual Display), Shortest Focus Distance 1.8m, Internal Memory 8000 points along with all standard accessories:- Ni-MH Battery (02 Nos.), Battery Charger (01 No.), Data Downloading Cable (01 No.), Heavy Duty Wooden Tripod (01 No.), Prism (Reflector) along with target & holder (01 No.), Single Prism Pole including Bipod (Stand) (01 no.), Operation Manual (01 no.) Tool Kit (01 No.).	1	

11.	Signal Analyzer	<p>Continuous 30 Hz to 2.9GHz sweeps Resolution bandwidths of 1Hz to Hz digitally implemented for measurement speed. Precision timebase and 1 Hz counter resolution. Adjacent channel power, channel power, carrier power and gated video measurements. Color screen. Capabilities for RF Communications. Fast digital resolution Bandwidths.</p>	1	
12.	Signal Generator E 8257D PSG	<p>Standard adapter 3.5mm F to 3.5mm F CD-RDM containing the English documentation set return to agilent warranty – 3years. E8257D-520 Frequency range from 250 KHz to 20GHz E8257D-UNT AM, FM, Phase modulation and LF output ESG-A series Analog signal generator High-Stability time base High-performance pulse modulation option 1E6 Frequency 250 kHz- 3GHz Resolution 0.01 Hz Sweep Modes: Step: frequency and power, and arbitrary list. Output 250 kHz to 1 GHz +13 to -136 dBm +17 to -136 dBm &gt;1 GHz to 3 GHz +10 to -136 dBm +16 to -135 dBm Output Impedance:50 Ω. Phase Modulation.</p>	1	
13.	DSP Lab. Version 1.0/2.0 Lab. Programming Tutor DSK 6713	<ul style="list-style-type: none"> <li>• <b>TMS320C6713 DSK:</b> TMS320C6713 DSK development board.</li> <li>• <b>Other Hardware :</b> External 5VDC Power Supply. IEEE 1284 compliant male-to- female cable.</li> <li>• <b>CD: Code Composer Studio DSK tools and Multi Channel Window DSP Lab solution Software for Real Time analysis.</b></li> <li>• <b>Other Accessories:</b> Audio cable Head Phone, Microphone, Installation, Manual and experiment Book.</li> <li>• MATLAB 7.0.4 (Trial version for 30 days).</li> <li>• Technical reference guide for TMS320C6713.</li> </ul> <p>The C6713 DSK has a TMS320C6713 DSP onboard that allows full-speed verification at code with code composer Studio. The C6713 DSK provides.</p> <ul style="list-style-type: none"> <li>• A USB Interface.</li> <li>• SDRAM and ROM</li> <li>• An Analog interface circuit for Data conversion (AIC).</li> <li>• An I/O port.</li> <li>• Embedded JTAG emulation support.</li> </ul> <p><b>Code composer features include:</b></p> <ul style="list-style-type: none"> <li>• IDE</li> </ul>	1	

		<ul style="list-style-type: none"> <li>• Debug IDE</li> <li>• Advanced watch Windows.</li> <li>• Integrated editor.</li> <li>• File I/O, probe points and graphical algorithm scope probes.</li> <li>• Advanced graphical signal analysis.</li> <li>• Interactive profiling.</li> <li>• Automated testing and customization via scripting.</li> <li>• Visual project management system.</li> </ul> <p>The kit should be provided with interactive teaching &amp; simulation software.</p>		
14.	Function Generator, Caddo 4080	<p>General – 1Hz to 20 MHz  Frequency range – Each range provide 10.”  Resolution – 10.1% after 30 min.  VCF input- (Max, input voltage <math>\pm</math> 10VDC)  VCF accuracy – Display <math>\pm</math> 1%  Variable Symmetry – Variable over 1:1 to 4:1 to 5MHz.  DC offset – Continuously variable, greater than <math>\pm</math> 10v open circuit, greater than <math>\pm</math>5v, into 50<math>\Omega</math>.  Square Wave – Variable amplitude  Sine wave – Variable amplitude.  Distortion - <math>\leq</math> 1% from 0.2Hz to 100 kHz  Linearity – 99% to 100 KHz  Rise/Fall time - <math>\leq</math>nsec  Level – Variable amplitude (4v to 15v) <math>\pm</math> v.  Rise/Fall time – 110 nsec (A-1 max 2MHz miscellaneous specification.  Operating Environment: 0 to 50<sup>0</sup> c  Power requirement: 100 to 240v, 50Hz/60Hz.  Dimension mm: 90x255x280  Weight : 1.8kg copper.</p>	1	
15.	DSO, 60 MHz with Real time sample (060)	<p>Band width 25MHz to 20MHz  Dco vertical gain – 2mv/div to 5mv/div : <math>\pm</math> 4%  Accuracy – 10 mv/div to 5v / div <math>\pm</math> 36  Level accuracy - <math>\pm</math> 0.3%  Calculated Rise time – 3.50ns: 7100M  7100c, 7100cA 1.75ns: 7200  BW Limit- 20 MHz selectable except 7025M  Maximum input – 400 Vpk  Position range - <math>\pm</math> 8 divisions  Input impedance - 50<math>\Omega</math> <math>\pm</math> 1.5%  Measurement 10mv/div to 5v/div <math>\pm</math> (5%x reading + 0.1v/div+1.0mv)</p>	1	
16.	DSO, 60 MHz with Real time sample (060), Colour	<ul style="list-style-type: none"> <li>➤ 1 GSa/s maximum Real-time Sample Rate and 1 Mpts Memory Depth.</li> <li>➤ Bandwidth options: 50MHz and 100MHz</li> <li>➤ Extensive set of trigger modes including: Edge, Video, Pulse Width, Slope, and Alternate.</li> <li>➤ 64 k TFT Color LCD, bright and vivid waveform display</li> <li>➤ Direct print to PictBridge compatible printers via USB Device interface.</li> <li>➤ Compact design to save your desktop space</li> </ul> <p><b>Technical Specification:</b>  <b>Bandwidth:</b> 100 MHz  <b>Channels:</b> 2 Channels + External Trigger</p>	1	

		<p><b>Real-time Sample Rate:</b> 1 GSa/s (Single Channel), 500 MSa/s (Dual Channels)  <b>Equivalent-time Sample Rate:</b> 25 GSa/s  <b>Rise Time:</b> 3.5 ns  <b>Memory Depth:</b>  <b>Single Channel:</b> 1Mpts  <b>Dual Channels:</b> 512 kpts  <b>Time base Range:</b> 2 ns/div ~ 50s/div  <b>Trigger Modes:</b> Edge, Video, Pulse Width, Slope, Alternate  <b>Vertical Resolution:</b> 8 bits  <b>Vertical Sensitivity:</b> 2 mV/div ~ 10V/div  <b>Maximum Input Voltage:</b> All inputs 1MΩ II 15pF 300V RMS CAT I  <b>Input Coupling:</b> DC, AC, GND  <b>Roll Range:</b> 500ms/div ~ 50s/div  <b>Cursor Measurements:</b> Manual, Track and Auto Measure modes  <b>Math:</b> +, -, x, FFT  <b>Internal Storage:</b> 10 Waveforms and 10 Setups  <b>USB Storage:</b> BMP, CSV, Waveforms and Setups  <b>Connectivity:</b> USB Device, USB Host, RS-232, P/F Out  <b>Display:</b> 5.6" TFT (64 k, Color LCD ), 320×234 resolution</p>		
17.	TINA Educational Version 5 User (Tina U7)	<p>Virtual Instruments Provided</p> <ul style="list-style-type: none"> <li>• XY Recorder</li> <li>• Oscilloscope</li> <li>• Function Generator</li> <li>• Multimeter</li> <li>• Signal Analyzer/Bode Plotter</li> <li>• Network Analyzer</li> <li>• Spectrum Analyzer</li> <li>• Logic Analyzer</li> <li>• Digital Signal Generator</li> <li>• Spectrum Analyzer</li> </ul> <p><input type="checkbox"/> Vista style installation and folder scheme  <input type="checkbox"/> Behavioral building blocks, nonlinear controlled sources  <input type="checkbox"/> <b>Powerful Spice -VHDL co-simulation including MCUs</b>  <input type="checkbox"/> Finite State Machine (FSM) editor with VHDL generation  <input type="checkbox"/> <b>Flowchart editor</b> and debugger for controlling <b>MCUs</b> (in V8.0 for PIC MCUs Only)  <input type="checkbox"/> Any number of <b>MCUs in one circuit</b>  <input type="checkbox"/> Extended MCU catalog including PIC18, CAN and more  <input type="checkbox"/> Execution time measurement and statistics for Transient Analysis  <input type="checkbox"/> Hyperlinks can be added to schematics and to the diagram window  <input type="checkbox"/> Extended semiconductor catalog  <input type="checkbox"/> <b>Application examples from Texas Instruments</b>  <input type="checkbox"/> <b>Labview</b> based virtual instruments  <input type="checkbox"/> Interface to build <b>LabVIEW</b> based virtual instruments  <input type="checkbox"/> Wave (.wav) files can be used as input  <input type="checkbox"/> New Open Examples command in file menu to open built in examples  <input type="checkbox"/> Autosave. Save your current schematic or PCB design at adjustable time intervals  <input type="checkbox"/> Parameter adding possibility to <b>Spice sub-circuits</b>  <input type="checkbox"/> Detection of components or nodes linked with convergence or irregular circuit problems  <input type="checkbox"/> On line update possibility for libraries, program</p>	1	

		<p>or both</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Post-processing formulas are stored with schematics, editable later</li> <li><input type="checkbox"/> <b>Live 3D Breadboard</b> (displaying and animating circuits with 3D parts on a virtual 3D breadboard)</li> <li><input type="checkbox"/> 3D virtual instruments to prepare and document lab experiments</li> </ul> <p>Tina Design Suite V8: ( Includes all TINA 8 Features plus TINA's advanced PCB Designer )</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Creating "<b>flex</b>" PCBs including 3D display</li> <li><input type="checkbox"/> Creating PCBs of any shape including round edges</li> <li><input type="checkbox"/> Buried and blind vias</li> <li><input type="checkbox"/> Extended catalog</li> <li><input type="checkbox"/> Improved optimizing autorouter</li> <li><input type="checkbox"/> Distance measuring tool</li> <li><input type="checkbox"/> <b>Display of complete 3D circuits</b> including parts connected externally to the PCB</li> </ul>		
18.	PID Controller Kit	<p>Technical Specification</p> <p>Proportional: 5% to 55%</p> <p>Integrator: 10m sec. to 110 m sec.</p> <p>Derivative: 1m sec. to 11m sec.</p> <p>ON/OFF controller – 0-156Hz, two variable DC+6v,+10v.</p> <p>Interconnection: 2mm socket.</p> <p>Power Supply – 1.6VA</p> <p>Dimension - W340x12240 x11105.</p> <p>Weight – 1:35kg (approx.)</p>	2	

**b) School of Biosciences & Biotechnology.**

S.No.	Name of the Equipment	Specification	Quantity	Price per Unit (Including all taxes)
1.	Microscope	With Magnus colour imaging system	1	
2.	Incubator orbital Shaker	<ol style="list-style-type: none"> <li>1. Electronic adjustable speed and angle</li> <li>2. Orbit 20 mm</li> <li>3. Speed50-25rpm.</li> <li>4. Temp. adjustable ring 250 °c to 60 ° c.</li> <li>5. Timer 1-96 hrs</li> <li>6. Display LCD</li> <li>7. Chamber volume = 60L</li> <li>8. Platform dimension 400x360mm.</li> </ol>	1	
3.	Ligation bath	<ol style="list-style-type: none"> <li>1. Temp. 5 ° C to 60 ° C (like incubation liquation intermediate storage of enzymes etc)</li> <li>2. Electronic controls with digital display</li> <li>3. Efficient temp. Control.</li> <li>4. Fix aluminum combi block.</li> </ol>	1	
4.	Spinix Orbital Shaker	<ol style="list-style-type: none"> <li>1. Speed adjustable from 40-200 rpm with an orbit of 12 mm.</li> <li>2. Max. permissible load 3kgs</li> <li>3. Steady vibration.</li> <li>4. Anti skid sheet holding dishes culture plates, trays etc by friction.</li> </ol>	1	
5.	Dry bath with standard heating block	<ol style="list-style-type: none"> <li>1. Temp range 25 ° c - 120 ° c</li> <li>2. Temp. Regulation +25 –120 ° c.</li> <li>3. Temp. stability 0.1 ° c</li> <li>4. Digital timer 1mm 96hrs for sample thermo stating control.</li> </ol>	1	

