

**Bundelkhand Institute of Engineering & Technology, Jhansi**

**Short Term Tender Notice No. BIET- 1/2017**

The tender documents for the **Purchase of Lab Equipment, laptop for Applied Science & Humanities Deptt.** (Physics and Chemistry) Lab Tender can be downloaded from the website, [www.bietjhs.ac.in](http://www.bietjhs.ac.in) or can be obtained from the store & purchase section. A separate demand draft for the cost of tender documents is required along with tender documents.

Tender opening and submission details are given below-

1. Name of firm with contact number & Email Address

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2. Tender cost With VAT (Non refundable) is **Rs. 2300/-**
3. Tender submission is up to **28.03.2017 at 2:00 PM**
4. Tender opening on **28.03.2017 at 2:30 P.M.**
5. Opening place of tender is conference room, administrative block BIET Jhansi.

**Signature & Seal of Tenderer**

**Bundelkhand Institute of Engineering & Technology, Jhansi (U.P)**

**Department: Applied Science & Engineering**

**Particular of EMD**

LAB No.	Laboratory	EMD (In Rupees)
ASH-1	Physics Lab Equipment ( Laptop & Printer )	50,000/-
ASH-2	Chemistry Lab Equipment	16,000/-

# Bundelkhand Institute of Engineering & Technology, Jhansi

## Tender Proforma for Physics Lab

Sr. No	Particular	Qty	Rates in Rs.	Cost in Rs.
<b>Technical Specification of the Instruments for Physics Lb</b>				
	<b>Item/experiment</b>	<b>Technical Specification</b>		
1.	<b>Spectrometry Kit (Supplied with L.C. 20 Sec)</b>	Spectrometer, (L.C=Sec20) Scale- Brass, Dia 175mm, Achromatic, focal length 178mm ,aperture 32mm Slit : German silver. Reticle : 90 cross etched on glass. Least count : 20 seconds Base : Aluminium Casting The spectrometer is mounted on a wooden base board. It is supplied with prism (EDF), Magnifier, Allen Key, Grating Holder and Prism Holder Sodium light Source: Scope of Supply : Complete with housing for sodium vapor lamp, transformer, Base, Mounting rod, Bosshead and Sodium Bulb. Starting Voltage : 470 Volts Operating Voltage : 220 Volts, 50 Hz. Lamp House : (300 x 85mm dia.) THE DEVICE SHOULD BE SUPPLIED IN A WOODEN BOX	4	
2.	<b>Advanced Polarimeter Kit (Compact Quartz Polarimeter )</b>	Polarimeter determination can be carried out quickly, precisely and Reliably. The polarimeter comprises a sturdy metal housing with slightly tilted frame for round currettes. The optical zero is shown on a triple light/shadow field. The sample to be measured can be put in polarimeter tubes from 100 to 200 mm length. The light beam from the light source passes through the illuminating lens & filter and it becomes collimated polarized. The polarizer produces a triple shadow field on the ½ wavelength plate. The scale is properly covered in housing with a precise least count of 3 minutes. Measuring Range of Optical Rotation : +/-	4	

		180 Division Value : 1 Dial Vernier Value in Reading : 0.05 Magnifying Factor of the Magnifying Glass : 4 times Monochromatic Light Source : 5893 A  Wattage : 35 W			
3.	<b>Optical Fiber Kit</b>	To Calculate the numerical aperture and study the losses that occur in optical fiber cable. To study losses in dB of two optical FIBER patch cords and the coefficient of attenuation. To study the relationship between the LED forward current and the LED optical power output. To study the relationship between the optical input power and the resultant photo current. To study the AC characteristics of a linear intensity modulation system. To study external circuitry to transmit an audio signal through an optical FIBER using the analogue transmitter and receiver. <ul style="list-style-type: none"> <li>• Fiber communication.</li> <li>• Numerical aperture.</li> <li>• Photo detector.</li> <li>• Photo transistor.</li> <li>• Optical losses.</li> </ul> Conversion efficiency. Intensity modulation system. Audio signal. Coefficient of attenuation order to understand the fundamental of optical fibers and analogue optical fiber communication, this kit has been designed. Wiring diagram for Fiber Optic Analogue Transmitter, Fiber Optic Analogue Receiver, Fiber Optic LED Driver and Optical Power Meter has been shown on the panel of kit.	4		
4.	<b>Study of B-H Curve with Deep Including software</b>	Auto identification of sensor, High speed data transfer, Programmable delay in data acquisition, Programmable sampling frequency, Graphical Analysis, Automatic & manual mode of demagnetization.	4		
5.	<b>Newton's Ring</b>	All the Components including sodium Lamp, Microscope, Power Supply and optics Housed in Single Piece Compact Body, Optical glass plate mounted at 45 (no adjustment required), Smooth moving collimating facility.	4		
6.	<b>Magnetic Field In</b>	To measure the spatial distribution of the magnetic field between a pair of identical coils in Helmholtz	4		

	<b>Helmholtz Coil</b>	<p>arrangement.</p> <p>To investigate the spacing between coils at which magnetic field is uniform and measure its spatial distribution.</p> <p>To demonstrate the superposition of the magnetic field of the two individual coils.</p> <p>Digital gauss meter with axial probe to measure magnetic Field.</p> <p>Distance between coils is adjusted in U channel bench.</p> <p>A Helmholtz arrangement consists of a pair of identical coils placed symmetrically along a common axis.</p> <p>Deflection compass with Base</p> <p>Power supply DC 0-16V, 5 Amp</p> <p>Axial probe holder</p> <p>Coil N =390, dia= 150mm</p>			
7.	<b>Focal Length of A Combination of Lenses Using Nodal Slide Assembly</b>	<p>Multipurpose A-base modular construction. The set-up consists of Nodal Slide Assembly, Light source, slit, convex lenses, object screen and base support.</p> <p>The set up is complete in all respect and requires no other accessories, the basic property of lens like focal length , focus point, nodal point, municipal axis, centre of curvature etc.</p>	4		
8.	<b>four Probe Resistivity Measurement</b>	<p>Built-in constant current source, dual range mill voltmeter &amp; power supply for oven. Pointed spring probes ensure good electrical contacts with the sample crystal (Germanium)</p> <p>Voltmeter Display : 3 ½ digit, 7segment LED, auto polarity &amp; decimal indication.</p> <p>Voltage Range : XI (0-200.0mV DC) &amp; X10 (0.2.00 V DC), 4mm socket, Current Display : 3 ½ digit, 7segment LED, Current Range : 0-20mA DC, 4mm socket, Oven Supply : 45 V AC (Switch position LOW) 60V AC (Switch position High)</p> <p>Oven Connector : 5 pin, DIN type</p> <p>Input Voltage : 220V, 50Hz AC</p>	4		
9.	<b>Hall Effect Experiment Kit</b>	<p>It is a Modular and Compact set up as compact set up as compare to other which are too bulky. Compact Electromagnet made of U-core with yoke having low loss lamination. Power supply for all general purpose application, laboratory use, experimental setup, circuit development and component/ circuit evaluation etc.</p> <p>stackable power supply, current source and gauss meter.</p> <p>Hall Effect Apparatus:</p> <p>Coils : 400 turns.</p> <p>Coil Current : 4.5Amp (Max).</p>	4		

		<p>Connection : 4mm safety socket.  U Core : 150x130(LxH), 40x40mm cross section.  I Core : Length =150mm, 40x40mm cross section.  Core material : Ferromagnetic.  Base dimension : 360x180x33mm  Weight : 8.8kg (Approx).</p> <p>Distance Measurement:</p> <p>Ultra Transducer : 28 cm to 1.0 m</p> <p>Clock Generator : 40 kHz</p> <p>Amplifier : 60 dB</p> <p>Threshold Detector : 0 to 9 V DC</p> <p>Buzzer Indicator : 1.5-15 V DC</p> <p>Power supply : 230 V +- 10%, 50 Hz</p> <p>Fuse : 500 mA</p> <p>Display : LCD</p>			
10.	<p><b>To determine the specific heat Capacity, of solids (Copper, lead glass)</b></p>	<p><b>Steam Chamber</b>  Inner chamber : 100x30mm (LxO)x  Outer chamber : 80x75mm(LxO)  Nozzle : 30x8mm (LxO)  Handle : L=90mm, VC  Supplied with rubber stopper &amp; silicon tube.</p> <p><b>'A' Base</b>  Mount : Support rod upto 8-14mm.  Material : Cast iron  Length : 280mm</p> <p><b>Universal Clamp</b>  Material : Aluminum, Powder coated finish.  Tightening screw : 'T' type  Rod : Chrome plated rod, length=160mm  Object : Holds up to 75mm diameter.</p> <p><b>Boss Head</b>  Object type : Square &amp; round shape  Object size : Up-to 13mm dia  Material : Aluminum alloy</p> <p><b>Dewar Flask</b>  Capacity : 100ml  Temperature : -200C to 150C  Inner surface : Bore-silicate glass, fully silvered</p> <p><b>Samples</b>  Sample : Copper, Lead &amp; Glass  Weight : 100gm each</p>	2		

		<p><b>Digital Thermometer</b>  Sensor/Input : P t-100  Range : -50 to +199.9 C  Resolution : 0,1 C  Accuracy : +- 0.2 C +-1 digit  Battery : 9V</p> <p><b>Round Bottom Flask</b>  Material : Glass  Volume : 250ml</p> <p><b>Beaker</b>  Material : Borosilicate glass  Graduation : 50ml interval  Volume : 250ml</p>			
11.	<b>Thermal &amp; Electrical Conductivity Metals</b>	<p>To determine the heat capacity of the calorimeter.  To study the thermal conductivity of copper and aluminum in a constant temperature gradient.  To determine the electrical conductivity of aluminum &amp; copper by plotting a current-voltage characteristic curve.  To verify the Wiedmann-Franz law and find out the Lorenz number.</p> <p><b>Conductivity Rod Cu/Al</b>  Dimension : 420x25.4mm (Length x Diameter)  Current Connection : 4mm socket  Temperature Point : 10 Nos., equal spacing 35mm  Calorimeter Socket : 20 x 20mm (Length x Diameter)</p> <p><b>Power Supply 0-30V, 20A DC</b></p> <p><b>Data logger</b>  Computer connection : USB 2.0 Full Speed  Maximum sampling rate : 100,000 samples per second</p> <p><b>Temperature Sensor:</b>  <b>Boss Head:</b>  Object type : Square &amp; round shape  Object size : Up-to 13mm dia  Material : Aluminum alloy</p> <p><b>Three Finger Clamp:</b>  Material : Aluminum alloy  Tightening screw : 'T' type plastic knob  Rod : Aluminum, length=160 mm  Object : Holds up to 75mm diameter</p>	1		
12.	<b>Michelson Interferom</b>	Precise measurement, mirror control is extremely fine with the micrometer of least count of 0.0001 mm	4		

	<p><b>eter With He-Ne Laser</b></p>	<p>Heavy base for high stability.  The mirrors and beam splitter are flat upto <math>\lambda/8</math> and with high quality coating for sharp and better into  Base dimension 290 x 212 x 164 mm  Distance of mirror M2 from beam splitter : 100mm.  Dimension of beam splitter : 50 x 38 x 7 mm (LxWxT)  Dimension of compensating plate : 50 x 38 x 7 mm (LxWxT)  Dimensions of mirrors M1 and M2 30 mm dia, Thickness 10 mm.  Reflectivity ; Transmittivity 50 : 50  Flatness of beam splitter <math>\lambda/8</math>  Least count(coarse adjustment knob) 0.01 mm  Least count(fine adjustment knob) 0.0001 mm  <b>He-Ne Laser, 2mW</b>  He-Ne laser with in built power supply. It Can be mounted on rod or can be placed on a lab jack  Wavelength : 632.8nm  Working current : 4mA~6mA  Output power : &gt; 2mW  Continuous working time : &gt; 8 hrs.</p>			
13.	<p><b>Characteristics of P-N Junction</b></p>	<p>Determination of reverse saturation current.  Study of Energy Band Gap of p-n Junction.  Study of Junction capacitance.  <b>PN Junction Setup:</b>  Selector switch at V-I position/Junction:  Voltmeter Display : 3 ½ digit, 7segment LED, auto polarity  Voltage Range : 0.000-1.999V  Current Display : 3 ½ digit, 7segment LED  Current Range ; 0-20mA</p>	4		
14.	<p><b>Sodium Light Source:</b></p>	<p>Complete with housing for sodium vapor lamp, transformer, Base, Mounting rod, Boss head and sodium Bulb.  Starting Voltage : 470 Volts  Operating Voltage : 220 Volts, 50 Hz.  Lamp House : Excluding Rod (300 x 85 mm dia.)</p>	4		
15.	<p><b>Mercury Light Source</b></p>		4		



<b>16.</b>	<b>High Vacuum Thin Film Vacuum Coating Unit Technical Specifications</b>				
1	<b>Direct Drive Rotary Pump model HPVT 250 is having the special quit &amp; Vibration free positive anti-suck back within built, compact &amp; Light weight, effective gas ballast, low oil charge, air cooled &amp; high water vapour handling capacity with free air displacement.</b>		01		
1.a	Capacity	250 LPM			
1.b	Mater Cube per hour	15			
1.c	Ultimate vacuum when measure on a Mcleod Gauge with Gas ballast closed	$>1 \times 10^{-3}$ Mbar			
1.d	Ultimate vacuum when measure on a Mcleod Gauge with Gas ballast opened	$>5 \times 10^{-2}$ Mbar			
1.e	Intel connection	KF 25			
1.f	Motor	HP motor Single Phase 1/2			
<b>2</b>	<b>Oil diffusion pump</b>				
2.a	Nominal Diameter	114 mm			
2.b	Ultimate Vacuum	$>1 \times 10^{-6}$ Mbar			
2.c	Effective Pumping speed	280 lit/sec			
2.d	Critical Backing Pressure	$3.5 \times 10^{-1}$			
2.e	Type of jet	Fractionating			
2.f	No of Stages	5			
2.g	Oil charge	100 cc			
2.h	Heater Rating	500 Watts			
2.i	Water @ 20 to 25 deg. C	3 to 4 (litre/min)			
<b>3.</b>	<b>Plumbing Lines &amp; Valves</b>				
3.a	A High Vacuum of 4 ½" (SS) size to provide to achieve maximum through put from the pump and provide isolation of the diffusion pump from exposing it to atmosphere when the chamber/load is exposed to atmosphere. The valve should be conveniently placed for easy operation. Plumbing lines are made of stainless steel of 1" NB that incorporate 2nos of butterfly valve, Air admittance & Needle valves through this needle valve one can adjust the flow rate				
<b>4.</b>	<b>VACUUM MEASURING GAUGES</b>				

11	<b>Electrical</b>				
		backing pressure. Vacuum in the job or pipe line needs to be seen on the gauge display using a selector switch. This pirani gauge should measure vacuum level from 0.5mber to 0.001mbar.			
4.b		Stabilized penning gauge with one gauge head is provided to monitor high vacuum on a separate penning meter in two ranges. From $1 \times 10^{-3}$ to $1 \times 10^{-5}$ to $2 \times 10^{-5}$ to $1 \times 10^{-6}$ mbar			
<b>5</b>		<b>HIGH VACUUM CHAMBER FOR COATING</b>			
5.a		High Vacuum Chamber (Metal Bell Jar) is a cylindrical construction fabricated out of non-magnetic stainless steel SS-304 having dimension of dia meter 300mm x 400mm height.			
5.b		Water cooling and view port window for clear observation of the process inside the Bell jar and provided with L-gasket to achieve vacuum sealing of the chamber flange.			
<b>6</b>		<b>Manual Chamber lifting</b>			
<b>7</b>		<b>BASE PLATE &amp; GADGETRY</b>			
7.a		A base plate of 13” diameter made of ss 304 material, finely ground & electro chemically polished to achieve a fine surface is needed. Chamber gadgetry made of stainless steel. Conducting part made out of electrolytic copper & insulating parts made out of Teflon.			
<b>8</b>		<b>LT Evaporation Feed Through (Filament holder)</b>			
8.a		Two Set of LT evaporation electrical feed through are needed			
8.b		Made out of electrolytic pure copper having 200Amps current carrying capacity			
<b>9</b>		<b>Evaporation Source Holder</b>			
9.a		One set for central evaporation. These can accept filament/basket/boat Evaporation source.			
<b>10</b>		<b>Supporting Frame</b>			
10.a		Three stainless steel pillars fitted to the base plate to support the SS works holder ring on which aluminum spherical or flat work holder is placed.			
10.b		A stainless steel mesh filter covering the pumping port to protect the diffusion pump from entry of un-wanted particles is needed.			
10.c		A dummy plate made ut of SS is mounted above the filter & fixed to the base plate using three pillars is needed.			
10.d		All the chamber gadgetry (except those used for electrical conduction, insulation, flat & spherical work holder ) offered in this system is made out of AISI-304 stainless steel & work holder are made out of aluminum.			

11.	<b>Electrical</b>				
11.a	The unit is wired & supplied for the operation on 220V AC, 50Hz. Single phase power				
11.b	LT Power supply	A transformer capable of delivering 200 Amps at 10 volts, intermittent & 100Amps at 20 Volts should be in cooperated in the system.			
11.c	LT Control	An Thyristor drive with Potentiometer to vary the voltage & Current			
11.d	Meters	Separate meters for LT current readout. Meter should read primary current and secondary current through current transformer.			
11.e	Indicator Lamps	Glow lamps to indicate On/Off status of Rotary Pump, Diffusion Pump, LT and other accessories.			
11.f	Power Connection	2 meters long 15 amps 3 core wire chord with plug			
<b>12</b>	<b>Mounting</b>				
12.a	Housed in a frame made up of MS material. Frame to be powdered coated for dust-free operation.				
12.b	Anitvibration mounts for rotary vacuum pump				
12.c	Vibration damping flexible corrugated bellow (SS304) of convenient length.				
<b>13.</b>	<b>Ultimate Vacuum</b>				
13.a	Vacuum range of $10^{-6}$ Mbar, when the chamber degassed & diffusion pump is supplied with water at 15-20 deg. C, 24 PSI Pressure & Flow rate of 1-2 lit/min.				
<b>14</b>	<b>Digital Thickness Monitor</b>				
14.a	Rate Display	3 Digit LED Auto Ranging from 0.00 to 999 kilo Angstrom/sec			
14.b	Thickness Display	4 digit LED display			
14.c	Crystal Frequency	6 MHz			
14.d	Film density	0.800 to 99.99 gm/cubic cm			

14.e	Size	220 mm widths x 230 mm depth x 93 mm height			
<b>15</b>	<b>Substrate Heater</b>				
15.a	Temperature	450 degree C			
15.b	Temperature Controller				
15.c	Thermocouple				
15.d	Heater Power Supply				

17.	Laptop	<p><b>Specification for Laptop</b></p> <p>Display 13.3-inch (diagonal) LED-backlit glossy widescreen display with support for millions of colours Supported resolution: 1440x900 (native), 1280x800,1152x1720 and 1024x640 pixels at 16:10 aspect ratio, and 1024x768 and 800x600 pixels at 4:3 aspect ratio.</p> <p><b>Storage</b> 128GB PCIe-based flash storage</p> <p><b>Processor</b> 1.6GHz dual Intel Core i5 (Turbo Boost up to 2.7GHz) with 3MB shared L3 cache</p> <p><b>Memory</b> 8GB of 1600MHz LPDDR3onboard memory</p> <p><b>Battery and Power</b></p> <ul style="list-style-type: none"> <li>• Up to 12 hours wireless web</li> <li>• Up to 12 hours iTunes movie playback</li> <li>• Up to 30 days standby time</li> <li>• Built-in 54-watt-hour lithium-polymer battery</li> <li>• 45W MagSafe 2 Power Adapter with cable management; MagSafe 2 Power Port</li> </ul> <p><b>Size and Weight</b></p> <ul style="list-style-type: none"> <li>• Height: 0.3-1.7 cm (0.11-0.68 inches)</li> <li>• Width: 32.5 cm (12.8)</li> <li>• Depth: 22.7 cm (8.94 inches)</li> <li>• Weight: 1.35 kg (2.96 pounds)</li> </ul> <p><b><u>Graphics and Video Support</u></b> <b>Intel HD Graphics 6000</b> Dual display and video mirroring: Simultaneously supports full native resolution on the built-in display and up to 3840x2160 pixels on an external display, both at millions of colours.</p> <p><b>Thunderbolt digit video output</b></p> <ul style="list-style-type: none"> <li>• Native Mini Display Port output</li> <li>• DVI output using Mini Display Port to DVI Adapter (sold separately)</li> <li>• VGA output using Mini Display Port to VGA Adapter (sold separately)</li> <li>• Dual-link DVI output Mini Display port</li> </ul>	Qty	Rates in Rupess	Cost in Rupees
			2		

		<p>to Dual-Link DVI Adapter (sold separately)</p> <ul style="list-style-type: none"> <li>• HDMI audio and video output using third-party Mini Displayport to HDMI Adapter (sold separately)</li> </ul> <p><b>Camera</b> 720p Face Time HD camera</p> <p><b>Connections and Expansion</b> MagSafe 2 USB 3 Headphone Dual mics SDXC card USB 3 Thunderbolt 2 Two USB 3 port (up to 5 Gbps)</p> <p>Thunderbolt 2 port (up to 20 Gbps)</p> <p>MagSafe 2 power port</p> <p>SDXC card slot</p> <p>3.5mm headphone jack</p> <p><b>Wireless</b> 802.11ac Wi-Fi wireless networking; IEEE 802.11a/b/g/n compatible Bluetooth 4.0 wireless technology</p> <p><b>Audio</b> Stereo speakers</p> <p>Dual microphones</p> <p>3.5mm headphone jack</p> <p>Support for Apple iPhone headset with remote and microphone</p> <p><b>Keyboard and Track pad</b> Full-sized backlit keyboard with 78 (US) or 79 (ISO) keys, including 12 function keys and four arrow keys (inverted “T” arrangement) with ambient light sensor Multi-Touch trackpad for precise cursor control; supports inertial scrolling, pinch, rotate, swipe, three-finger swipe, four-finger swipe, tap, double-tap and drag capabilities</p> <p><b>Electrical and Operating Requirements</b></p> <ul style="list-style-type: none"> <li>• Line voltage: 100-240V AC</li> <li>• Frequency: 50Hz to 60Hz</li> <li>• Operating temperature: 10 to 35 C (50 to 95F)</li> <li>• Storage temperature; -25 to 45 C (-13 to</li> </ul>			
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		<p>113 F)</p> <ul style="list-style-type: none"> <li>• Relative humidity: tested up to 3,000 metres (10,000feet)</li> <li>• Maximum storage altitude: 4,500 metres (15,000 feet)</li> <li>• Maximum storage altitude: 10,500 metres (35,000 feet)</li> </ul> <p><b><u>Operating System</u></b>  <b>Mac OS Sierra</b>  Mac OS is the operating system that powers everything you do on a Mac. Mac OS Sierra introduces Siri to Mac – along with new ways to enjoy your photos and work more seamlessly between devices.</p> <p><b>Accessibility</b>  With built-in support for vision, hearing, physical and motor skill, and learning and literacy, you can create and do amazing things.</p> <p><b>Features include:</b></p> <ul style="list-style-type: none"> <li>• VoiceOver</li> <li>• Reduce Motion</li> <li>• Closed Captions</li> <li>• Zoom</li> <li>• Siri and Dictation</li> <li>• Taxito Speech</li> <li>• Increase Contrast</li> <li>• Switch Control</li> </ul>			
	<p><b>Printer</b></p>	<p><b>GENERAL</b></p> <p>Duty cycle (monthly, letter) : Up to 15,000 pages  Print colours : No  Functions : Print, copy, scan, fax  Recommended monthly Page volume : 500 to 2000</p> <p>Duty cycle (monthly,A4) : Up to 15,000 pages  Print technology : laser  Mac compatible : yes</p> <p><b>PRINT</b></p> <p>Print speed black (normal, A4) : Up to 25 ppm  Print speed black (normal, letter) : Up to 26 ppm</p>	<p><b>2 Nos</b></p>		

		<p>Duplex printing : Automatic (standard)</p> <p><b>PROCESSOR</b></p> <p>Processor speed : 600 MHz</p> <p><b>SCAN</b></p> <p>Scan resolution, hardware : Up to 3000 x 300 dpi (color and mono, ADF): up to 600 x 600 dpi (color, flatbed); Up to 1200 x 1200 dpi (mono, flatbed)</p> <p>Scan resolution, Optical: Up to 3000 dpi (color and mono, ADF): up to 600 dpi (color, flatbed); Up to 1200 dpi (mono, flatbed)</p> <p>Scan technology : Contact Image Sensor (CIS)</p> <p>Color scanning : Yes</p> <p>Levels of grayscale : 256</p> <p>Automatic paper sensor : No</p> <p>Envelope feeder : No</p> <p><b>DISPLAY</b></p> <p>Display : 2-line LCD</p> <p><b>PAPER MEDIA</b></p> <p>Media weight, supported : 60 to 163 g/m</p> <p><b>MULTITASKING SUPPORTED</b></p> <p>Multitasking Supported : yes</p> <p><b>MACHINE DIMENTIONS &amp; WEIGHT</b></p> <p>Package weight : 14.4 kg</p> <p><b>CABLE INCLUDED</b></p> <p>Cable included : yes, 1 USB cable</p> <p><b>WARRANTY</b></p>			
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		<p>Warranty : 1 year limited warranty(Return to HP/Dealer- Standard Bench Repair), plus 2 year Extended Support</p> <p><b>FAX</b></p> <p>Fax transmission speed : 4.2 kbps</p> <p>Fax transmission speed : 3 sec per page</p> <p>Fax resolution ; Up to 300 x 300 dpi (halftone enabled)</p>			
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**Signature & Seal of Tenderer**

## Tender Proforma for Chemistry Lab Equipment

Sr. No	Particular	Qty.	Rates in Rs	Cost in Rs.
1.	P <sup>H</sup> System	2		
2.	UV-Vis Spectrophotometer	1		
<p><b>Microprocessor Based ph System with electrode and temperature probe, Auto Temp. Compensation, 3 point calibration, Resolution 0.001 ph.</b></p> <p><b>Includes:</b></p> <p>DR6000 with multi adapter for round and rectangular vials,</p> <p>Basis user manual, CD with manual and procedure</p> <p>Manual in PDF format. Power cords for US and EU.</p> <p>Technical Specification:</p> <p>Operating Mode Transmittance (%)</p> <p>Absorbance and</p> <p>Concentration (wavelength, time)</p> <p>Source Lamp Tungsten ( visible range),</p> <p>Deuterium (UV range)</p> <p>Wavelength Range 190-1100 nm</p> <p>Wavelength Accuracy ±1 nm</p> <p>Wavelength Reproducibility</p> <p>&lt; 0.1 nm</p> <p>Wavelength Resolution 0.1 nm</p> <p>Wavelength Selection Automatic, based on method</p>				

		<p>Selection</p> <p>Spectral Bandwidth 2 nm</p> <p>Photometric Measuring Range <math>\pm 3</math> Abs</p> <p>Photometric Accuracy &lt; 1% at 0.5-2.0 Abs at 546 nm</p> <p>5 abs at 0.0-0.5 Abs</p> <p>Scanning Speed 900 nm/min (in 1 nm steps)</p> <p>Photometric Linearity 0.5% - 2 Abs</p> <p><math>\leq 1\%</math> at &gt; Abs with neutral glass at 546 nm</p> <p>Stray Light KI- solution at 220 nm &lt; 3.3 Abs/&lt;0.05%</p> <p>Display TFT 7 inch WVGA color touch</p> <p>Date Logger 5000 data points (result, date, time, sample-ID, user-ID)</p> <p>Preprogrammed Methods &gt; 250</p> <p>User Programs 200</p> <p>Sample Cell Compatibility</p> <p>Rectangular: 10, 20,30, 50mm, 1 inch,</p> <p>Round: 13 mm, 16mm rectangular cell</p> <p>With additional adapter</p> <p>Dimensions Metric (H x W x D)</p> <p>8.5 in x 19.7 in x 18.1 in</p> <p>(215 mm x 500 mm x 460 mm)</p>			
3.	<b>01 ATX 224</b>	(Specifications:	01		

	<p><b>SHIMADZU UNIBLOC ANALYTICAL BALANCE ATX 224</b></p>	<p>Model: ATX 224</p> <p>Capacity : 220 gms</p> <p>Minimum Display : 0.1mg</p> <p>Pan Size : ø91</p> <p>Main Body Dimensions (mm) approx : 210(W) x 340 (D) x 325 (H)</p> <p>Weight (Kg) approx : 6.2 Kg</p> <p>Power Requirement : 12V, 1A</p> <p>Touch-Key Calibration (Internal Calibration)</p> <p>Easy setting Best fit to weighing application</p> <p>Expanded piece counting function</p> <p>Comparator function</p> <p>Formulation mode</p> <p>Windows Direct Communication Function</p>			
<p>4.</p>	<p><b>Nvis 1101</b></p> <p><b>Water and soil Analysis Kit</b></p>	<p>2-To test the presence Residual chloride in water sample</p> <p>3-To test the presence measure its amount</p> <p>4-To test the presence fluoride, iron Hardness.</p>	<p>01</p>		

**Signature & Seal of Tenderer**

## Submission of the Tender:

1. Sealed tenders in along with earnest money amounting to the value mentioned with each item in the tender document in form of demand draft only. The tenders should reach to undersigned latest by 28 March up to 2: 00 P. M.
2. Tenders should be submitted either in person or by post in sealed envelopes on which the name of department, item quoted; tender number and date along with name and address of the firm will be written.
3. Tender cost (non refundable) (ii) Earnest Money (iii) Proof of PAN and TIN registration document (iv) Standing of the firm (v) Major supplies executed in recent past (vi) Authorized dealer certificate from OEM & Commercial terms and conditions. The rates must be quoted in both figures and words. Any overwriting and/or cutting must be duly attested failing which tenders are likely to be rejected.
4. **Tender Cost and Earnest money** amounting to the **value given in the tender document for each Lab** should also be submitted with the tender in the form of separate Demand Drafts drawn in favour of Director, BIET, Jhansi.
5. Earnest money and Cost of Tender in the form of Bank Drafts must be placed in a separate sealed envelope by writing "**Earnest Money**" on top of the envelope.
6. All the envelopes as above must be kept and sealed in a big envelop. The name of items quoted, enquiry/tender no and the opening date should invariably be mentioned on the top of big envelope.
7. Sealed tenders should be sent to Director, Bundelkhand Institute of Engineering and Technology (BIET) Campus, Kanpur Road, Jhansi -284128 latest by 28 March at 2: 00 P.M. . The sealed tenders may be dropped in the box kept at Store and Purchase section at BIET, Jhansi.

## Terms and Conditions for Submission of Tenders

1. Firms will have to attach the list of customers to whom they have supplied similar items in previous year along with performance reports. Total turnover of the firm must be atleast 50 Lacs per year in the last three years consecutive years. A certificate to these effects should be issued from the sales tax department.
2. The descriptive and illustrative literature of the quoted item in original must accompany with the tender.
3. Tenders received after the closing date and stipulated time shall not be considered and the institute shall not be responsible for any postal delay.
4. Tender should be valid atleast for a period of 04 months. (04 Months from opening date of tender).
5. Our terms of payments are strictly after receipt of material and check at our institute regarding the quality and working experience.
6. The rates should be quoted FOR store, Bundelkhand Institute of Engineering and Technology (BIET) Campus, Kanpur Road, Jhansi -284128. Inclusive of all taxes/excise duty/fright/package/forwarding expenses/insurance etc.
7. Firm shall be solely responsible for defective supplies and losses caused to institute on account of defective supply.

8. Tenders brought personally should be dropped into tender box.
9. Suppliers must be registered with sales tax department and they should state registration no.
10. Quantity of items may increase or decrease or may be cancelled upto any extent.
11. No sales tax form "C" or "D" etc for concessional rate shall be provided by the institute.
12. All tender must be accompanied by EMD as mentioned in the tender document in the form of Demand Draft drawn in favour of Director, Bundelkhand Institute of Engineering and Technology (BIET) Jhansi.
13. Tenders deviating from above terms and conditions shall be rejected straight way without assigning any reason thereof.
14. EMD will be forfeited if the equipment's are not supplied in given time.
15. If required, the firms have to supply the sample of the items.
16. If certain equipment/material needs to be checked/tested at site of the firm, all expenditure (including TA/DA) of our expert members shall be borne by the firm concerned.
17. Penalty : The firm, which is not able to supply the equipment's/materials mentioned in purchase order by the due date , shall be liable to pay a penalty equal to 0.10 % of the value of purchase order per day. However this can be waived of by the Director under special circumstances.
18. **Payment:** - Ninety percent of contract price shall be paid to the supplier after the delivery / commissioning / testing and completion of the work. The remaining 10% of contract price shall be paid to the supplier within 30 days after satisfactory working.
19. Director has every right to extend the due date if so required but all the tenders will be opened together.
20. Deduction of TDS (Income Tax & VAT) as per Govt. Rules.
21. The firm must provide original Guarantee/Warrantee card as issued by the manufacturer, as the case may be.
22. The Director BIET, Jhansi may reject any or all quotations/tenders without assigning any reasons.
23. All disputes subject to Jhansi Jurisdiction only.

**For BIET, Jhansi**

