

**BHAGALPUR COLLEGE OF ENGINEERING, NH -80,  
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**(Department of science & Technology, Government of Bihar)**



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Ref *TEQIP/cell/0013*

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**Letter for Expression of Interest.**

Bhagalpur College of Engineering intends to procure equipment for **Electronics and Communication Department-Analog and Digital Electronics Lab**. List of equipment is in Annexure-1. Interested manufacturers/Suppliers are requested to submit following details through mail within 1 (one) week of publishing of this notice at [tpobcebgp8@gmail.com](mailto:tpobcebgp8@gmail.com).

**Information Required.**

- (1) Name of the firm;
- (2) Complete address with pin
- (3) Name of contact person
- (4) Email id of the contact person
- (5) Mobile no of the contact person

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**Annexure-1**  
**Analog & Digital Electronics Lab**

Sl No.	Items name	Specification
1	BJT Amplifier Training Kit	<ul style="list-style-type: none"> <li>● Variable DC Power supply (0-20V)</li> <li>● DC Voltmeter &amp; Ammeter (mili &amp; micro)</li> <li>● NPN PNP BJT</li> </ul>
2	CE Amplifier Trainer Kit	<ul style="list-style-type: none"> <li>● On board circuit to study common emitter amplifier.</li> <li>● On board POT for varying amplitude of input signal.</li> <li>● On board test point to analyse the signal</li> <li>● ON/OFF switch and LED for power indication.</li> <li>● Bare board Tested Glass Epoxy SMOBC PCB is used.</li> <li>● Block Description Screen printed on glassy epoxy PCB</li> <li>● All interconnections are made using 2mm banana Patch cords</li> <li>● Supplied with User manual and patch cords</li> <li>● With built-in power supply</li> <li>● Enclosed in a wooden/plastic box</li> </ul>
3	h-parameter Trainer Kit	<ul style="list-style-type: none"> <li>● Power supply : +15V &amp; -15V DC</li> <li>● Mains : 230V AC</li> </ul>
4	Wien bridge oscillator trainer Kit	<ul style="list-style-type: none"> <li>● With built-in power supply</li> <li>● On board circuit to study wein bridge Oscillator(using Opamp).</li> <li>● On board variable resistance to balance the bridge,</li> <li>● Test points are provided to analyse signals at</li> </ul>

		various points
5	Push-Pull amplifier	<ul style="list-style-type: none"> <li>• Built with variable frequency</li> </ul>
6	HP, LP, BP active filter trainer Kit	<ul style="list-style-type: none"> <li>• Facility to vary the Gain &amp; Cut Off Frequency of the various Active Filters</li> <li>• Facility to connect the required Inbuilt Sine wave Generator (10 Hz to 100 kHz) / External Signal as input</li> <li>• Built-in necessary DC Regulated Power Supplies with short circuit protection &amp; indication for supply "ON" to work on 230V AC Mains</li> <li>• Test points at various stages in the circuit to observe the waveforms and voltages.</li> </ul>
7	Frequency Meter Trainer Kit	<ul style="list-style-type: none"> <li>• Frequency Range : 20 Hz - 30 MHz</li> <li>• Resolution : 10 Hz (60 KHz Range) 10 KHz (30 MHz Range)</li> <li>• Sensitivity : 0.5 Volts</li> <li>• Accuracy : <math>\pm</math> (0.5% 1D) of rdg</li> <li>• Attenuation : 1 : 1, 1 : 20</li> <li>• Input Coupling : AC</li> <li>• Input Impedance : 1 MW</li> <li>• Max. Input Voltage : 200 V (DC AC Peak)</li> <li>• Display : 4 digits, 7 Segment , LED Display</li> </ul>
8	RF(LC) Oscillator trainer Kit	<ul style="list-style-type: none"> <li>• 9V DC at 50mA</li> <li>• IC regulated Power Supply internally connected</li> <li>• PNP transistor</li> <li>• Variable gang condenser.</li> </ul>
9	4 bit binary adder & Subtractor trainer Kit	<ul style="list-style-type: none"> <li>• +5V D.C. at 200mA, IC regulated power supply internally connected.</li> <li>• 4-bit full adder IC.</li> </ul>

		<ul style="list-style-type: none"> <li>• Quad 2-input Ex-OR Gate IC.</li> <li>• LEDs for visual indication of status.</li> <li>• SPDT switches for logic selection.</li> <li>• Adequate no. of other Electronic Components.</li> <li>• Mains ON/OFF switch, Fuse and Jewel light.</li> <li>• The unit is operative on 230V <math>\pm</math>10% at 50Hz A.C. Mains.</li> <li>• Good Quality, reliable terminal/sockets are provided at appropriate places on panel for connections / observation of waveforms.</li> </ul>
10	Study of RS, D, T & JK flip flop	<ul style="list-style-type: none"> <li>• Built-in power supply DC +5 V @ 500 mA</li> <li>• 4 Logic input switches with green LED display</li> <li>• 3 Logic output red LED display</li> </ul>
11	DSO	<ul style="list-style-type: none"> <li>• 60MHz/250Mhz</li> <li>• Dual Channel Digital Storage</li> <li>• Oscilloscope with TFT Monitor</li> </ul>
12	Function Generator Trainer Kit	<p>Frequency Ranges : Selectable</p> <p>1 Hz to 10 Hz</p> <p>10 Hz to 100 Hz</p> <p>100 Hz to 1 KHz</p> <p>1 KHz to 10 KHz</p> <p>10 KHz to 100 KHz</p> <p>Sine Wave Generation : By Wave Shaping Circuit Switched</p> <p>Faults : 4 Nos.</p> <p>Fuse : 350 mA, slow blow</p> <p>Power Supply : Max 230V AC,</p>

		50 Hz $\pm$ 10%
13	Logic Analyzer	including General purpose Probe, Accessories 17 Channel with 60 MHz Colour Mixed Signal Oscilloscope
14	Boost Strap Voltage Sweep	Built in power supply : +9V DC, Mains : 230V AC
15	Feedback Amplifier Trainer Kit	<ul style="list-style-type: none"> <li>• DC power supply 12 V @ 500mA, Four feedback amplifiers on panel, Voltage shunt, current shunt, voltage series &amp; current series</li> </ul>
16	Universal Counter	<ul style="list-style-type: none"> <li>• Frequency Range: 0.1 Hz to 100 MHz</li> <li>• Time Interval Range: 100 ns to 105 s</li> <li>• Time Interval Average Range: 0 ns to 105 s</li> <li>• 5 Logic input switches with green LED display</li> <li>• 4 Logic output with red LED display On panel pulser</li> <li>• Built-in power supply DC +5 V @ 500 mA</li> </ul>
17	MUX DEMUX Trainer kit	<ol style="list-style-type: none"> <li>1. 5V D.C. at 100mA, IC regulated power supply.</li> <li>2. 21 Input Switches for data input.</li> <li>3. IC For Multiplexing 74150 is provided on board with Combinational Circuit.</li> <li>4. IC For Demultiplexing 74154 is provided on board with Combinational Circuit.</li> <li>5. One Not Gate is provided on board using 7404</li> <li>6. 16 Output LEDs with driver circuit to observe the output of Multiplexer-Demultiplexer.</li> <li>7. A Pulser to provide the pulses manually for triggering.</li> <li>8. Adequate no. of other Electronic Components.</li> <li>9. Mains ON/OFF switch, Fuse and Jewel light.</li> <li>10. The unit is operative on 230V</li> </ol>

		±10% at 50Hz A.C. Mains
18	RC Phase Shift Oscillator	<ul style="list-style-type: none"><li>• DC supply 12 V @ 500 mA</li><li>• On panel circuit diagram of RC phase shift oscillator.</li><li>• Required numbers of patch cords and operating manual.</li></ul>