



Institute of Engineering & Technology, Lucknow, Sitapur Road, Lucknow,  
Uttar Pradesh - 226021

(11)

### INVITATION LETTER

Package Code: TEQIP-III/2019/UP/ietl/274

Package Name: IET-TEQIP-ECD-LAB-1

IET/TEQIP-III/2019/229-a

Current Date: 05-Jul-2019

Method: Shopping Goods

Sub: INVITATION LETTER FOR IET-TEQIP-ECD-LAB-1

Dear Sir,


1. You are invited to submit your most competitive quotation for the following goods with item wise detailed specifications given at Annexure I,

Sr. No	Item Name	Quantity	Place of Delivery	Installation Requirement (if any)
1	Diode Characteristics Trainer	2	Institute of Engineering and Technology, Lucknow	
2	RECTIFIER TRAINER	2	Institute of Engineering and Technology, Lucknow	
3	Transistor Characteristics Trainer	2	Institute of Engineering and Technology, Lucknow	
4	BJT AMPLIFIERS AND EMITTER FOLLOWER TRAINER	2	Institute of Engineering and Technology, Lucknow	
5	UNDERSTANDING CHARACTERISTICS OF MOSFET, FET AND UJT TRAINER	4	Institute of Engineering and Technology, Lucknow	
6	OPERATIONAL AMPLIFIER TRAINER	2	Institute of Engineering and Technology, Lucknow	

2. Government of India has received a credit from the International Development Association (IDA) towards the cost of the **Technical Education Quality Improvement Programme [TEQIP]-Phase III** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.
3. **Quotation**
  - 3.1 The contract shall be for the full quantity as described above.
  - 3.2 Corrections, if any, shall be made by crossing out, initialling, dating and re writing.
  - 3.3 All duties and other levies payable by the supplier under the contract shall be included in the unit Price.
  - 3.4 Applicable taxes shall be quoted separately for all items.
  - 3.5 The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
  - 3.6 The Prices should be quoted in Indian Rupees only.
4. Each bidder shall submit only one quotation.
5. Quotation shall remain valid for a period not less than 60days after the last date of quotation submission.
6. Evaluation of Quotations: The Purchaser will evaluate and compare the quotations determined to be Substantially responsive i.e. which
  - 6.1 are properly signed; and
  - 6.2 Confirm to the terms and conditions, and specifications.
7. The Quotations would be evaluated for all items together.
8. Award of contract The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.
  - 8.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of Contract.
  - 8.2 The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be Incorporated in the purchase order.
9. Payment shall be made in Indian Rupees as follows:

**Satisfactory Delivery & Installation and Acceptance - 100% of total cost**

10. Liquidated Damages will be applied as per the below:  
Liquidated Damages Per Day Min % : 0.50  
Liquidated Damages Max % : 10
11. All supplied items are under warranty of 36 months from the date of successful acceptance of items and AMC/Others is .
12. You are requested to provide your offer latest by 14:30 hours on 22-Jul-2019.
13. Detailed specifications of the items are at Annexure I.
14. Training Clause (if any) YES
15. Testing/Installation Clause (if any) YES
16. Performance Security shall be applicable: 5%
17. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.
18. Sealed quotation to be submitted/ delivered at the address mentioned below, TEQIP-III  
Institute of Engineering & Technology, Lucknow, Sitapur Road, Lucknow, Uttar  
Pradesh - 226021
19. We look forward to receiving your quotation and thank you for your interest in this project.

  
(Authorized Signatory)  
Name & Designation  
**COORDINATOR**  
**TEQIP PHASE-III**  
Institute of Engineering &  
Technology, Lucknow-21

Sr. No	Item Name	Specifications
1	Diode Characteristics Trainer	<p>The trainer should have following features , Specifications &amp; Experiments that can be performed: A complete system to study the diode characteristics, Forward and reverse characteristics experiment can be performed on this trainer kit, Silicon, Zener and Germanium diode are provided with this system, Inbuilt Ammeter and Voltmeter are provided, Digital display for displaying voltage and current, Different test points are provided, On Board DC power supply: +12V DC, Ammeter Range: 1<math>\mu</math>A to 200mA, Display: 3½ digit, Voltmeter Range : 1mV to 200V, Display : 3½ digit, Mains power : 230V AC <math>\pm</math>10%,</p> <p>Study of V-I characteristics of Silicon Diode, Study of V-I characteristics of Zener Diode, Study of V-I characteristics of Light Emitting Diode (LED)</p>
2	RECTIFIER TRAINER	<p>The trainer should have following features , Specifications &amp; Experiments that can be performed: Real time appearance of components, Test points are provided in different sections of power supply, Designed by considering all the safety standards, Provided with a briefly described manual, Low cost trainer including many experiments, Transformer Rating : 9 V center tapped (300 mA) approx., Mains Supply: 230 V, <math>\pm</math>10%, 50 Hz, Half wave Rectifier output: + 4 V DC approx., Center-Trapped Rectifier: +8 V DC approx., Bridge Rectifier Output: + 8 V DC approx., Filter: LC Type, Load: Resistive 220 W,</p> <p>Study of Half-wave Rectifier, Study of Full-wave Center-tapped Rectifier, Study of Full-wave Bridge Rectifier, Calculation of Ripple Factor and Efficiency of various Rectifier.</p>
3	Transistor Characteristics Trainer	<p>The trainer should have following features , Specifications &amp; Experiments that can be performed: In-built Ammeter and Voltmeter are provided, On board DC power supplies are provided, Digital display for displaying voltage and current, Different test points are provided, Three important characteristics of a Transistor on this board: Input characteristic, Output characteristic, Constant current transfer characteristic, A complete system to study the Transistor characteristics, DC power supply: +5 V, -5 V+12 V, -12 V, Transister: BC548, 2N3906, Ammeter Range: 1<math>\mu</math>A to 200 mA, Display : 3½ digit, Voltmeter Range: 1mV to 200 V, Display: 3½ digit, Mains: 230 V AC <math>\pm</math>10%,</p> <p>Study of the characteristics of PNP transistor in Common Base Configuration and to evaluate - Input resistance, Output resistance and Current gain., Study of the characteristics of PNP transistor in Common Collector Configuration and to evaluate - Input resistance, Output resistance and Current gain., Study the characteristics of NPN transistor in common Emitter Configuration and to evaluate -Input resistance, Output resistance and Current gain., Study of the characteristics of NPN transistor in Common Base configuration and to evaluate - Input resistance, Output resistance and Current gain., Study of the characteristics of NPN transistor in Common Collector configuration and to evaluate - Input resistance, Output resistance and Current gain., Study the characteristics of PNP transistor in Common Emitter Configuration and to evaluate - Input resistance, Output</p>



		resistance and Current gain.
4	BJT AMPLIFIERS AND EMITTER FOLLOWER TRAINER	<p>The trainer should have following features , Specifications &amp; Experiments that can be performed: Easy illustration of multistage amplifier and emitter follower, In-built sine wave generator with variable frequency and amplitude, In- built DC power supply, Manual, DC power supply : +12V, +5V, Fuse :500mA, slow blow, Sine wave generator, Frequency 10Hz - 100KHz <math>\pm 10\%</math>, Amplitude:0 to 5Vpp, Mains supply:230 V <math>\pm 10\%</math>, 50 Hz,</p> <p>To study the operation of single-stage and multi-stage RC-Coupled amplifier, To plot the frequency response of RC-Coupled amplifier, To calculate the current gain and input impedance of Darlington pair and b of a transistor, To calculate the voltage gain of Darlington pair using voltage divider biasing.</p>
5	UNDERSTANDING CHARACTERISTICS OF MOSFET, FET AND UJT TRAINER	<p>The trainer should have following features , Specifications &amp; Experiments that can be performed: Generalized design, Standalone operation, Inbuilt fixed and variable power supply, Toggle switch for selection of variable power supply, Inbuilt Ammeter and Voltmeter, Bread board, Resistance bank, 10 turn potentiometer, Learning Material CD, Mains Supply:90-230V, 50Hz, DC Fixed Power Supply:-5V, +15V, +35V, DC Variable Power Supply :1.5V to 14 V, 1.5V to 34V, Voltmeter:0-200V, Ammeter: 0-200mA, Bread Board Distribution strips:2, Distribution holes:200, Terminal Strips:1, Terminal holes:640, Resistor Bank: M.F.R. 100E 1W (3 Nos.), M.F.R. 470E 1W (3 Nos.), M.F.R. 1K 1W(3 Nos.), Variable Resistances: 5 K<math>\Omega</math> Ten turn Potentiometer (1 No.), 10 K<math>\Omega</math> Ten turn Potentiometer (1 No.), 5 K<math>\Omega</math> Single turn Potentiometer (1 No.), Fuse :500 mA, slow blow,</p> <p>To study and plot the Drain Characteristics of n channel MOSFET, To study and plot the Transfer Characteristics of n channel MOSFET, To study and plot the V-I characteristics of JFET, Evaluation of following parameters of JFE:DC Drain resistance, Transconductance, Amplification factor, To plot the VI characteristics of UJT, Evaluation of following parameters of UJT:Intrinsic Stand- off Ratio, Inter base resistance</p>
6	OPERATIONAL AMPLIFIER TRAINER	<p>The trainer should have following features , Specifications &amp; Experiments that can be performed: Comprehensive portable platform to perform over 15 experiments, In-built power supply, Breadboard, In-built function generator, Compact design, Mains power supply: 90 - 270V <math>\pm 10\%</math>, 50Hz (SMPS), Fixed DC power supply :+12V, Regulated, -12V, Regulated, +5V, Regulated, -5V, Regulated, Variable DC power supply: +1.5V to +10V Regulated using, LM317, -1.5V to -10V Regulated using : LM337, Function Generator: Sine Wave-Frequency:1KHz to 100KHz, Frequency Control: 100KV, 10 turn Potentiometer, Amplitude :0V to 5Vpp, Amplitude Control: 100KV, Single turn Potentiometer, Triangular Wave-Frequency :1KHz to 100KHz, Frequency Control:100KV, 10 turn Potentiometer, Amplitude:0V to 5Vpp, Amplitude Control: 100KV, Single turn Potentiometer, Square Wave-Frequency:1KHz to 100KHz, Frequency Control:100KV, 10 turn Potentiometer, Amplitude: 5Vpp, fixed, Bread Board- Distribution strips:2, Distribution holes:200, Terminal holes : 640, Op-amp: IC uA741 (2 Nos.), : All pins terminated on 2 mm, Banana Sockets, Supply Voltage:<math>\pm 22V</math> max., Differential Input Voltage: <math>\pm 30V</math> max., Input Voltage :<math>\pm 15V</math> max., Slew Rate :0.5 V/<math>\mu</math>s (VCC = <math>\pm 15V</math>), Resistor Bank- SMD Resistance 1K<math>\Omega</math> 1% 1/4W (5 Nos.), SMD Resistance 10K<math>\Omega</math> 1% 1/4W (5 Nos.), SMD Resistance 100K<math>\Omega</math> 1% 1/4W (5 Nos.), Diode :Diode 1N 4007, Capacitor Bank :Electrolyte Cap. 1mf/63V, Disc cap. 1nf/63V, Disc cap. 10nf/63V,</p>

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Disc cap. 100nf/63V, Variable Resistance bank-1K $\Omega$  Single turn Potentiometer (2 Nos.), 10K $\Omega$  Single turn Potentiometer (2 Nos.), 100K $\Omega$  Single turn Potentiometer (2 Nos.), 1M $\Omega$  Single turn Potentiometer (2 Nos.), Fuse : 500mA, slow blow,

Study of Operational Amplifier as: Inverting Amplifier, Non - inverting Amplifier, Buffer, Comparator, Adder, Subtractor, Square Wave Generator, Differentiator and its working as High Pass Filter, Integrator and its working as Low Pass Filter, Logarithmic Amplifier, Voltage Controlled Current Source, Current Controlled Voltage Source.

**FORMAT FOR QUOTATION SUBMISSION**  
(In letterhead of the supplier with seal)

Date: \_\_\_\_\_

To: \_\_\_\_\_

Sl. No.	Description of goods \ (with full Specifications)	Qty.	Unit	Quoted Unit rate in Rs. (Including Ex-Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments)	Total Price (A)	Sales tax and other taxes payable	
						In %	In figures (B)
<b>Total Cost</b>							

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. \_\_\_\_\_ (Amount in figures)  
(Rupees \_\_\_\_\_ amount in words) within the period specified in the Invitation for Quotations.

We confirm that the normal commercial warranty/ guarantee of \_\_\_\_\_ months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Contact No. \_\_\_\_\_

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