



National Institute of Electronics and Information Technology

(Formerly DOEACC, Aurangabad)

(A Unit of NIELIT Society, New Delhi)

A Scientific Body of Dept. of Information Technology, Ministry of Commu. & Information Technology, Govt. of India)

Dr. B. A. MARATHWADA UNIVERSITY CAMPUS, AURANGABAD – 431004.

Phone: 0240 – 2982021, 2982022; Fax: 0240 – 2982050.

By Speed Post/ EMS.

Ref No.: NIELIT-A/CST-PUR/ENQ/227

Date: 15-06-2016.

INVITATION TO QUOTE RATES

(Last Date for Submission 07 July, 2016.)

To

«Company»

«Address1»

«Address2»

«Address3»

«City» - «PostalCode». «State»

Dear Sir,

You are requested to quote rate(s) for the items mentioned below as per the specifications given below.

Sr. No.	Name of the Item(s)	Description / Specifications	Quantity Required	Unit
01	Trainer Kits: Educational Trainer Kits (for PE Lab.):	Trainer Kits: (Educational Trainer Kits): Characteristics of Dica, Triac, SCR, Triggering of Thyristor Using R & RC, UTJ, Mosfet & IGBT, SCR & Trainer kit of UPS Characteristics. (for Power Electronics Lab Use)	01 (One) No. of Each Kit. (Total 18 Nos. Kit)	Nos.
Details Specification as per attached List			As per List	

You are requested to furnish Earnest Money Deposit (EMD) of Rs. 3,750/- (Three Thousand Seven Hundred Fifty Only.) in the form of Demand Draft from any Nationalized Bank drawn in favor of the Director NIELIT Aurangabad, payable at Aurangabad (Maharashtra), India.

The other terms & conditions on the reverse should be read carefully and noted in order to comply with the bid/tender/quotation.

Yours faithfully,

Authorized Signatory
For NIELIT, Aurangabad

(Ref: Approved Indent No. PR-195 dt. 31-03-2016)

PEL-MLG

[PTO]

TERMS AND CONDITIONS

1. The quotation should be addressed to Director, NIELIT Aurangabad.
2. The price quoted should be firm and F.O.R. NIELIT Aurangabad. Wherever possible, educational prices should be quoted. Quantity indicated is tentative and is subject to change.
3. The quotation/offer should be submitted on or before last date of submission (Due Date) in the sealed envelope. The envelope should be superscripted as "Quotation for _____" and should bear the enquiry number and due date on the top. Quotations received after the due date will not be considered.
4. Quotations will not be accepted by Fax, Email or any such electronic data transfer form.
5. Customs Duty, Excise Duty, Service Tax, VAT/ TIN, Packing & Forwarding (P&F), Freight & Insurance, Transportation, Octroi/LBT, Installation, Training, etc charges should be separately mentioned. Discount, if any, should also be mentioned. Total price of the goods should also be mentioned.
6. NIELIT, Aurangabad will not provide Sales Tax exemption certificates, if required.
7. Octroi/LBT of Aurangabad Municipal Corporation may either be included or may be shown as 'at actual'.
8. **A) The EMD should be enclosed along with the Tender/Bid/Quotation as Bid security in the form of Demand Draft of any Nationalize Bank drawn in favor of Director NIELIT, Aurangabad and payable at Aurangabad (Maharashtra). Without EMD, Tender/Bid/Quotation shall be not considered. The EMD Shall be refunded without interest to the unsuccessful tenderer/ bidder as per the GFR-19 rule. (i.e. EMD 2% to 5% of the estimated cost.)**
B) The Successful Bidder / Tenderer Shall Deposit an Amount of Security Deposit (SD) as per the GFR-19 rule. (i.e. 5% to 10% of the total order value.)
9. Delivery period and place of delivery should be clearly mentioned. Place of delivery NIELIT, Aurangabad.
10. The goods should be quoted along with a guarantee/warranty period of minimum 'one year' from the date of successful installation.
11. Validity of the quotation should be mentioned. Normally quotations should be valid for at least 60 days from the date of opening of the quotation.
12. The bidding firm must have a valid Sales/Vat Tax /TIN Registration Number.
13. Payment Terms:
 - a. No advance payment (Prepayment) will be made at any cost.
 - b. 80 % of the invoice value to the successful bidder will be made after satisfactory installation and commissioning of the goods at NIELIT, Aurangabad. NIELIT, Aurangabad, will make remaining 20% payments after completion of satisfactory training and acceptance of the goods.
 - c. If the seller from outside India (Quoting in foreign currency) insists for Letter of Credit in the respective country, the charges of the Letter of Credit in the seller's country has to be borne by the seller and has to submit performance bank guarantee in addition to the security Deposit in favor of NIELIT, Aurangabad on the terms and conditions prescribed by NIELIT Aurangabad before execution of the agreement.
14. Detailed description & technical specifications of the goods quoted by you should be provided. Technical literature / brochure should accompany the quotation.
15. Manufacturing license or authorized Distributor / Principal or Dealer Certificate copy should be enclosed.
16. OEM/ OES items if any, should be supplied in the original sealed packing of the original equipment manufacturer and should be opened at NIELIT, Aurangabad in the presence of Center's representative only.
17. It will be binding on the part of the successful bidder to supply the goods at the rates quoted, failing to which the EMD will be forfeited the firm will be removed from the suppliers list and no further enquiries would be sent.
18. NIELIT, Aurangabad does not bind itself to accept the lowest or any such quotation and has the right to accept or reject whole or any part of tenders or a portion of the supply of goods without assigning any reasons. No correspondence in case of rejected tenders will be entertained. Incomplete quotations are liable to be rejected.
19. All questions, disputes or differences arising under and out of or in connection with the contract, if concluded, shall be referred to the sole arbitrator appointed by the Director, NIELIT Aurangabad. A) Subject to the Aurangabad Jurisdictions' only.
20. Tenderers/Bidders are requested may be present at the time of opening the quotation/ Bid, if possible.

NIELIT-Aurangabad (M.S.)

Requirement of Power Electronics Lab.

* Specifications of required Educational Trainer Kits.

Date: 15/06/2016.

Sr. No	Description	Specifications	QTY/ Nos.
1	Trainer Kit of Characteristics of Diac	<ol style="list-style-type: none"> 1. Power Supply requirement : 230V AC, 50 Hz. 2. Built in Regulated Power Supply : 0 to 35V DC/100 mA continuously variable. 3. Following parts provided on Single PCB with connecting terminals. DIAC - DB3 - 1 No. 4. All parts are soldered on single PCB of size 8" x 7" with complete circuit diagram screen-printed. 5. Standard Accessories : 1. A Training Manual. 2. Connecting Patch cords. 	01 No
2	Trainer Kit of Characteristics of Triac	<ol style="list-style-type: none"> 1. Power supply requirement : 230V AC, 50 Hz. 2. Built in Regulated Power supply : 0 to 5V DC/100 mA continuously variable. 0 to 24V DC/100 mA continuously variable 3. Following parts provided on Single PCB with connecting terminals. TRIAC BT 136 - 1 No. Different Load Resistors 4. All parts are soldered on single PCB of size 8" x 7" with complete circuit diagram screen-printed. 5. Standard Accessories : 1. A Training Manual. 2. Connecting Patch cord 	01 No
3	Trainer Kit of Characteristics of SCR	<ol style="list-style-type: none"> 1. Power supply requirement : 230V AC, 50 Hz. 2. Built in Regulated Power supply : +24 V DC/250mA. 0-5 V DC/100 mA continuously variable 3. Following parts provided on Single PCB with connecting terminals. SCR - Bt151 Different Load Resistors 4. All parts are soldered on single PCB of size 8" x 7" with complete circuit diagram screen-printed. 5. Standard Accessories : 1 A Training Manual. 2. Connecting Patch cords. 	01 No
4	Trainer Kit of Triggering of Thyristor using R & RC	<ol style="list-style-type: none"> 1. Power supply requirement : 230V AC, 50 Hz. 2. Following parts provided on Single PCB with connecting terminals. SCR BT151 - 1 No. 1N4007 Diode - 2 Nos. 1K 1/2W Resistor , Potentiometer 22K 1u/630V PPC capacitor 3. On board regulated +15 Volt DC supply 4. Accessories : 1. A Training Manual 2. Patch cord - 15 Nos. 	01 No
5	Trainer Kit of Triggering of Thyristor using UJT	<ol style="list-style-type: none"> 1. Power supply requirement : 230V AC, 1 Phase. 2. Following parts provided on Single PCB with connecting terminals. SCR BT136 UJT-2N2646 3. Variable fire angle 4. On board regulated +15 Volt DC supply for UJT circuit 5. All parts are soldered on single PCB of size 8" x 7" with complete circuit diagram screen printed. 5. Standard Accessories : 1. A Training Manual. 2. Connecting Patch cords.. 	01 No

Sr. No	Description	Specifications	QTY
6	Trainer Kit of Characteristics of MOSFET & IGBT with digital Meters	<ol style="list-style-type: none"> 1. Power supply requirement : 230V AC, 50 Hz. 2. Built in IC based regulated Power supply : 0-10 V DC/200 mA continuously variable. 0-10 V DC/200 mA continuously variable 3. Following parts provided on Single PCB with connecting terminals. MOSFET 3N200-1 No. , IGBT - IRG4PC40W -1 No. Different Load Resistors 4. All parts are soldered on single PCB of size 8" x 7" with complete circuit diagram screen-printed. 5. Standard Accessories : 1. Manual with practical & circuit diagrams. <p style="text-align: center;">2. Connecting patch cords</p>	01 No
7	Forced commutation of SCR using Class-C,D & E method	<ol style="list-style-type: none"> 1. Power supply requirement : 230V AC, 50 Hz. 2. Built in Regulated Power supply : +12V DC 3. Following parts provided on Single PCB with connecting terminals. SCR BT 151 - 4 Nos. 1N4002 Diode - 3 Nos. , OA79 Diode - 1 No. 4. On board 1 HZ pulse generator for triggering SCR. 5. Accessories : 1. A Manual 2. Patch cord 	01 No
8	Series Inverter using SCR	<ol style="list-style-type: none"> 1. Power supply requirement : 230V AC, 50 Hz. 2. Built in firing circuit with UJT Oscillator 3. DC supply for inverter (Half bridge) to converter it to AC. 4. Following parts provided on Single PCB with connecting terminals. SCR TYN612 - 2Nos. 5. 10 Watt Lamp Load 6. Inverter ON/OFF circuit 7. All parts are soldered on single PCB of size 12" x 9" with complete circuit diagram Screen printed in multi-color . 8. Standard Accessories : 1. A Training Manual. <p style="text-align: center;">2. Connecting Patch cords.</p>	01 No
9	Parallel Inverter using SCR	<ol style="list-style-type: none"> 1. Power supply requirement : 230V AC, 50 Hz. 2. Built in firing circuit with UJT Oscillator 3. DC supply for inverter (Half bridge) to converter it to AC. 4. Following parts provided on Single PCB with connecting terminals. SCR TYN612 - 2 Nos. 5. 25 Watt Lamp Load 6. Inverter ON/OFF Control circuit 7. All parts are soldered on single PCB of size 12" x 9" with complete circuit diagram Screen printed in multi-color. 8. Standard Accessories : 1. A Manual. 2. Connecting Patch cords. 	01 No
10	Trainer kit of UPS Characteristics	<ol style="list-style-type: none"> 1. Capacity : 500VA 2. Output Voltage : 230 V AC Nominal 3. Input Voltage : +12V DC Battery. 4. Output Frequency : 50 Hz. 5. Accuracy : + 5%. 6. Switching : Automatic. 7. Backup time : 10 Minutes. 8. Standard Accessories : 1. Manual having practical. 	01 No

Sr. No	Description	Specifications	QTY
11	Trainer kit of Single phase Cyclo-converter	<ol style="list-style-type: none"> 1. Power supply requirement : 230V AC, 1 Phase 50Hz. . 2. Following parts provided on Single PCB with connecting terminals. SCR BT151 : 4 Nos. 3. Load Resistors : 1K 10W. 4. AC Mains Transformer with step down AC Voltages: 20-0-20V /250 mA 5. Variable Firing angle Load SCRs. 6. All parts are soldered on single PCB of size 12" x 9" with complete circuit diagram Screen printed. 7. Standard Accessories : 1. A Manual. 2. Connecting Patch cords. 	01 No
12	Trainer kit of DC to DC Converter	<ol style="list-style-type: none"> 1. Principle : Conversion of low voltage DC to high voltage DC. 2. DC Source : 12V DC (unregulated). 3. Type of Inverter : Parallel Inverter. 4. Trigger Circuit : Digital trigger circuit with variable control. 5. Trigger Frequency : 25Hz to 170Hz (variable). 6. Commutation : Complementary voltage type. 7. Output : High Voltage DC. 8. Controls : 1. Mains ON / OFF 2. Potentiometric for variable trigger frequency. 9. Indicators : Mains ON / OFF. 10. Test Points : Provided at various stages in the circuit to observe waveforms and voltages. 11. Power Requirements : 230V, +10% AC, 50Hz, Single phase. 12. Standard Accessories : Detailed Instruction Manual. 	01 No
13	Trainer Kit of Single phase Half/Full wave Controlled Rectifier	<ol style="list-style-type: none"> 1. Power supply requirement : 230V AC, 1 Phase. 2. Following parts provided on Single PCB with connecting terminals. SCR - Bt151- 2nos. UJT - 2N2647 - 1No. Lamp Load 3. Accessories : 2 mm patch cords A Training Manual. 	01 No
14	Trainer Kit of SCR Applications	<ol style="list-style-type: none"> 1. Power supply requirement : 230V AC, 1 Phase. 2. Following parts provided on Single PCB with connecting terminals. SCRs, Zener diodes, Power Diodes, UJTs and resistors 3. Load Resistors : 1K 10W, Lamp load 4. Different types of Firing Circuits: R, RC, UJT, Half and Full Controlled. 5. Single Phase Transformer with step down AC Voltages : 0-20V/100 mA for firing circuit 6. All parts are soldered on single PCB of size 12" x 9" with complete circuit diagram screen printed in multi Color. 7. Standard Accessories : 1. A Training Manual. 2. Connecting Patch cords. 	01 No
15	Trainer Regulated Power supply using Zener diode with two digital meters	<ol style="list-style-type: none"> 1. Variable DC power supply of 0-15V @ 250mA 2. Different values of three Zener diodes on board. 3. Different values of three Resistors on board. 4. Dual range DC voltmeter of 1.5V/15V 5. Dual range DC ammeter of 250μA/25mA 6. One 10KW potentiometer is provided for load variation. 	01 No

Sr. No	Description	Specifications	QTY
16	Trainer kit of Regulated power supply using transistor in series and shunt with IC 723.	<ol style="list-style-type: none"> 1. Load Block consisting of One Resistance & One Potentiometer of 5K 2. Center Tapped Transformer Secondary providing 12V-0-12V One LED indicator to indicate Power input. 4 On-board Circuits - Zener Regulator (Shunt) with Current Boost Transistor. -- Series Regulator. - LM723 Regulator. 5. All interconnections are made using 2mm banana Patch cords 6. Bare board Tested Glass Epoxy PCB is used. 7. Set of 2mm Patch cords for interconnections. 	01 No
17	Trainer kit of Series and Parallel Resonance	<ol style="list-style-type: none"> 1. Output Waveform – Sine 2. Frequency and Amplitude Adjustment is provided 3 Using Potentiometers One LED indicator to indicate Power input. 4. On-board Circuits• R-L/R-C Series Circuit– R-L-C Series Circuit– R-L/R-C Parallel– R-L-C Parallel– Fixed DC Power Supply: +12V 5. All interconnections are made using 2mm banana• Patch cords. Bare board Tested Glass Epoxy PCB is used. • Set of 2mm Patch cords for interconnections• 	01 No
18	Trainer kit of Speed control of DC Motor using SCR (Open Loop)	<ol style="list-style-type: none"> 1. Motor Load terminated at banana terminals 2. One LED indicator to indicate Power input. 3. One Potentiometer of 1K. 4. On-board Circuits• Pulse amplitude transformer– comparator– Ramp generator– Zero crossing detector– SCR bridge. 5. Fixed AC power supply : 230 VAC 6. All interconnections are made using 2mm banana Patch cords. 7. Bare board Tested Glass Epoxy PCB is used. • 8. Set of 2mm Patch cords for interconnections• 	01 No

- Note :**
- 1) All kits fitted in alpine wooden boxes.
 - 2) Provided with Glass proxy PCB with masking.
 - 3) Circuit Diagram printed on PCB.
 - 4) All Components are soldered on Silver plated lugs for ease of operation.
 - 5) Good quality banana Sockets are used for better Connectivity.
 - 6) Provided with operational manual