E-TENDER NOTICE

Sealed tenders are hereby invited by the Principal, Govt. Polytechnic - Diu on behalf of the President of India for supply of Electrical Engineering Equipment’s as stated below as per the terms and condition stipulated attached herewith. Tender documents should be submitted along with nonrefundable tender fees of Rs. 500/- DD, favor of Daman & Diu Society for Technical Edu. & Higher Edu. (CENT) and refundable E.M.D Rs. 45,000/- of the total cost of supply items in favor of Daman & Diu Society for Technical Edu. & Higher Edu. (CENT).

Last date of Submission of Tender : 30/03/2020 at 12:00 PM
Opening of Tender : 30/03/2020 at 03:00 PM (if Possible)

<table>
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<tr>
<th>Sr. No.</th>
<th>Peripheral</th>
<th>Configuration/ Specification</th>
<th>Qty.</th>
<th>Rate</th>
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<tbody>
<tr>
<td>1.</td>
<td>Demonstration Model of transformer/Cut section model Specifications: 50 VA to 150 kVA</td>
<td>Every parts should be isolated. And its works as per principal and law. It also provided charts and description of its. <strong>Material:</strong> Electrical Steel Lamination and Copper Wires, Terminal Blocks. <strong>Features:</strong> Excellent voltage regulation Overload capacity, Compact design, Efficient performance, Long functional life <strong>Application Area:</strong> Engineering College Labs Polytechnics Labs, Cut Section Views Engineering Student Projects, Medical Applications <strong>Specifications:</strong> 50 VA to 150 kVA</td>
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<td>2.</td>
<td>Demonstration Model Of Generator/cut section model</td>
<td>Its works as per principal of law. Demonstration model, <strong>Motor Voltage</strong> 220-380 V <strong>Material :</strong> Metal, <strong>Power (Watts or HP)</strong> 1 HP <strong>Velocity ratio</strong>: 4:1, <strong>Height</strong>: 145 mm <strong>Brand &amp; Dimension</strong>: 15 x 24 x 18 cm <strong>Material:</strong> Electrical Steel Lamination and Copper Wires, Terminal Blocks. <strong>Features:</strong> Excellent voltage regulation Overload capacity, Compact design, Efficient performance, Long functional life <strong>Application Area:</strong> Engineering College Labs Polytechnics Labs, Cut Section Views Engineering Student Projects, Medical Applications <strong>Specifications:</strong> 50 VA to 150 kVA</td>
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<td>3.</td>
<td>PARALLEL OPERATION OF TWO SINGLE PHASE TRANSFORMER</td>
<td>Mains supply: Single Phase, 230V±10%, 50Hz Single Phase Transformer (2 Nos.) Rating: 1kVA, Primary Voltage: 0-230V Secondary Voltage: 0-200-230V, Rated Current: 5A, <strong>Digital Meter</strong>, Voltmeter: 500V (2 Nos.) Ammeter: 10A (2 Nos.), MCB (SP): 10A Simulations Software, All are necessary (Benn, Siemens, ABB, or Equivalent Make) <strong>Scope of Learning</strong> Study of polarity test under two single phase, transformers Study of parallel operation of two single phase transformers under equal voltage ratio Study of parallel operation of two single phase transformers</td>
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Dated: 11/03/2020
PERFORM SWINBURNE’S TEST

Features:-

- Transformers under unequal voltage ratio.
- Technology learning software to provide Theoretical, Practical and Experimental training required for understanding the fundamentals of Electronics Electrical, software features, should include interactive GUI, user friendly and easy, navigation, detail theory, explanation of complex topics with Animations and user interactive simulations makes it a powerful learning tool.


| 4. PERFORM SWINBURNE’S TEST Features: | Machine with Mechanical Loading Arrangement Provided with Digital Tachometer Machine with Class “B” Insulation Heavy Duty Base/Channel Simulations Software Brake-Drum/Pulley with heat suppression facility Equipped with supply indication lamps Designed by considering all the safety standards Diagrammatic representation for the ease of Connections, Learning material CD, 2 Year Warranty, Technical Specifications **DC Machine Specification** Type : DC Shunt, Rating : 3HP, Voltage Rating : 200V, RPM : 1500 (no load), Insulation : Class ‘B’, **Loading Arrangement** : Mechanical, Brake drum/Pulley : Aluminum Casted, Digital Meters used, Voltmeter : 1 Nos Ammeter : 2 nos, Dimensions (mm) : W 600 x D 350 x H 450 (Control Panel), W 335 x D 450 x H 560 (Motor), Weight : 11kg (approx.), (Control Panel): 40kg (approx.) (Motor) All are necessary (Benn, Siemens,ABB, or Equivalent Make) **Scope of Learning** Study and Determine the losses of DC Machine and correspondingly calculate the efficiency of DC Machine by Swinburne’s Test Method, Technology learning software to provide Theoretical, Practical and Experimental training required for understanding the fundamentals of Electronics Electrical, software features, should include interactive GUI, user friendly and easy, navigation, detail theory, explanation of complex topics with animations and user interactive simulations makes it a powerful learning tool.

**Magnetism ,Electromagnetism, Alternating Current, Circuits, Transformer Rectifier, Filter, Three Phase Circuits, Electrical, Machines, DC Machine,AC Machine Semiconductor Devices, Measuring Instruments, Digital, Electronic, Basic Concepts, Voltage and Current, Circuit, Analysis, Network Theorems**

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| 5. MICROCONTROLLER BASED THREE PHASE INDUCTION MOTOR DRIVE | Trainer for studying Sinusoidal Pulse Width Modulated, (SPWM) as well as Space Vector Modulated (SVM) inverter fed, variable frequency drive operation. | 1 |
Specifications:
- The kit comprise of single phase uncontrolled rectifier, three phase inverter, 1 HP, 415 V, 50 Hz, 1440 RPM three phase, induction motor with proximity as speed sensor and 32-bit Cortex M4 ARM Microcontroller based control circuit. Microcontroller based control circuit with LCD and keyboard, interface is provided for selecting different operating modes. Observation of intermediate stage waveforms of gate pulse generation. Both Digital and Analog mode of control is possible. External, circuit interfacing through analog mode of control. MATLAB utility for viewing and controlling speed of the motor from personal computer. The kit works directly with 230 V, 50 Hz, AC supply. Proper isolation between control and power circuit is provided.
- Observation of stator current through current transformers.

Motor Controller:
- STM32F407VGT6 ARM Cortex-M4 Board featuring 32-bit ARM Cortex-M4 core, 168MHz, 1 MB Flash, 192 KB RAM in an LQFP100 package.
- On-board ST-LINK/V2 with selection mode switch, Power, supply: through USB bus or from an external. 8 General purpose input lines, 8 General purpose output lines, 16x2 LCD interface, 5 keys interface.
- 3 high speed digital outputs and 2 High speed digital input lines. 6 PWM outputs, 3 QEI inputs.
- 9 Analog inputs are level shifted to 1.65V for AC signal interface. List of Experiments:
  - Study of principle of Variable Frequency Drive (VFD).
  - Study of SPWM control technique.
  - Study of Relationship between Control Voltage, Modulation Index, frequency and Inverter Output Voltage in SPWM Inverter. (Digital/Analog Mode Control).
  - V/f control of Induction Motor with SPWM Inverter. Study of SVM control technique.
  - Study of Relationship between Control Voltage, Modulation Index, frequency and Inverter Output Voltage in SVM Inverter. (Digital Mode / Analog Mode Control). V/f control of Induction Motor with SVM Inverter. To study harmonic spectrum and THD of output waveforms. Comparison of SPWM and SVM control techniques.

6. CUT SECTION MODELS:-

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<tr>
<th>1 HP / 3 Phase / 415 V / SQIM / TEFC</th>
<th>0.5HP / 3 Phase / 415 V / SLIM 0.5HP / 0.5 KVA / Salient Pole / Synchronous machine with Damper Winding</th>
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TERMS & CONDITIONS

1. Eligibility:
   i. The bidder should be registered under Sales Tax/VAT.
   ii. The bidder should have their support center at Una/Veraval /Rajkot/Ahmedabad and Diu or nearby.

2. The Earnest Money Deposit (EMD) of Rs.45,000/- is payable in the form of issued by Scheduled Bank in favor of Daman & Diu Society for Technical Edu. & Higher Edu. (CENT) payable at Diu. Tender received without Earned Money Deposit will be treated as invalid.
3. The rate(s) quoted should be strictly for free door delivery at Government Polytechnic, Diu, Education HUB, Kevdi, Diu respectively & will be valid and operative for supply order issued on or before.
4. The rates should be quoted inclusive of all taxes, installation & commissioning charges.
5. No extra charge for packaging, forwarding and insurance, transportation etc. will be paid in addition to the rates quoted.

**Financial Bid Cover**

1. The rates should be quoted only for the items specified in the list of requirement and should be for the items of given special make / manufacture.
2. Rates quoted for items other than the required specification / make / manufacture may not be considered.
3. The decision of the Principal, Govt. Polytechnic-Diu for acceptance / rejection of any articles supplied including the decision for equivalent specifications, standard and quality etc. of articles shall be final.
4. The Purchase Committee will open the Tenders online in presence of tenderer(s) or their representatives, if any presents in the Office of the Principal, Govt. Polytechnic-Diu on 30/03/2020 at 03:00 pm.
5. The Principal, Govt. Polytechnic-Diu will be at liberty to accept the tender for the entire quantity or the part thereof at the rates submitted by the Bidder or at reduced rate during the negotiations if any.
6. Rates tendered / offered in response to the concerned Tender Notice by the successful bidder shall be considered as acceptance of all above terms and conditions for supply for all legal purpose.
7. (a) The Successful Tenderer will have to pay an amount equal to 05% of the total value of articles mentioned in the supply order within 10 days from the date of the order as Security Deposit in form of Earnest Money Deposit (EMD) in favor of Daman & Diu Society for Technical Edu. & Higher Edu. (CENT). The successful bidder has to submit performance bank guarantee (here after referred to as Security Deposit) from any nationalized bank of **05% amount of his final offer towards performance security within 10 days from the date of issue of supply order for the duration of warranty period**.
   
   (b) Non-receipt of Security Deposit within stipulated time limit will result in automatic cancellation of the order for supply without any intimation.
8. The Earnest Money(s) / Security Deposit(s) paid by the tenderer(s) earlier against any tender(s) or supply order(s) is / are not adjustable with Earnest Money or Security Deposit required as per conditions of this tender.
9. All bills should be in Triplicate and should invariably mention the number and date of supply order.
10. All bills for amount above Rs. 5,000/- should be pre-receipted on a Revenue Stamp of proper value. Bills for amount exceeding Rs. 5,000/- not pre-receipted on Revenue Stamp of proper value will not be accepted for payment.
11. **As per Good Service Tax (GST) tax will be deducted while making/crediting payment to the supplier. As applicable time to time.**
12. In respect of any dispute given rise to the legal proceedings between the parties, the courts at Daman and Diu & DNH shall alone have the jurisdiction.
13. The tender can be submitted up-to **12:00 pm 30/03/2020** and shall be opened on same day at 3:00 hrs if possible in the office of the Principal, Govt. Polytechnic-Diu or in the office of the Hon'ble Collector, Diu in the presence of the Purchase committee and Tenderer(s) or their representative(s) if present.

14. Items should be covered by 'onsite warranty' for a period of One year from the date of installation and bidder must have service/support location at local level i.e. Diu/Una/Veraval/Rajkot/Ahmedabad or nearby.

15. The designated committee will check quality of the Electrical Engineering Equipment's supplied before installation at Principal, Govt. Polytechnic-Diu.

THE ABOVE CONDITIONS ARE ACCEPTED AND ARE BINDING TO ME/US.

(Signature of Supplier/Tenderer)
Date & Rubber Stamp.

Note: Please return one copy of these conditions duly signed along with your tender/Quotations.

(N. G. GAJWANI)
Principal
Govt. Polytechnic-Diu.