

INVITATION FOR QUOTATION

TEQIP-II/2015/GJ1G07/Shopping/84

04-Aug-2015

To,

Sub: Invitation for Quotations for supply of Goods

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	Brief Description	Quantity	Delivery Period(In days)	Place of Delivery	Installation Requirement (if any)
1	Power electronics laboratory setup	1	90	GOVERNMENT ENGINEERING COLLEGE, SECTOER-28,GANDHINAGAR, GUJARAT, PIN-382028	YES

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 II** 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, initialing, 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 **55** days 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:

Delivery and Installation - 0% of total cost

Satisfactory Acceptance - 100% of total cost

10. All supplied items are under warranty of **12** months from the date of successful acceptance of items.

11. You are requested to provide your offer latest by **15:00** hours on **26-Aug-2015** .

12. Detailed specifications of the items are at Annexure I.
13. Training Clause (if any) **Training and demonstration should be provided as per the requirements after successful installation at the institute.**
14. Testing/Installation Clause (if any) **SUCCESSFUL INSTALLATION & SATISFACTORY PERFORMANCE.**
15. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.
16. Sealed quotation to be submitted/ delivered at the address mentioned below,
Government Engineering College Nr. Animal Vaccine Institute Sector-28 Gandhinagar
17. We look forward to receiving your quotation and thank you for your interest in this project.

(Authorized Signatory)

Name & Designation

Annexure I

Sr. No	Item Name	Specifications
1	Power electronics laboratory setup	As per Annexure

Annexure

Technical Specification for Power Electronics Laboratory Setup

The laboratory setup consist the following basic requirements:

- [01] Single Phase 230V AC \pm 10%, 50 Hz as a Mains Supply source and Low Voltage Power Supply Source as per requirements
- [02] Three phase 415 V AC \pm 10%, 50 Hz as a Mains Supply source and Low Voltage Power Supply Source with standard socket should be provided as per requirements
- [03] As per standard the MCB should be provided for all power sources for safety and precaution.
- [04] As per standard Red, Yellow and Blue indicator should be provided at front panel for indication of supply
- [05] Unearthed (Isolated) Oscilloscope with Power Scope provided on board with bench
- [06] DC Voltmeter and Ammeter as well as AC Voltmeter and Ammeter should be provided on board for various measurement.
- [07] Load Assembly (Lamp Load, Universal Motor) should be provided on board.
- [08] The board consist single phase firing circuit, three phase firing circuit, cycloconverter firing circuit and Pulse Width Modulation firing circuit.
- [09] Standard test points/sockets should be provided in all section or in each circuits (Power as well as control) for checking input and output of circuits
- [10] Isolation and Pulse amplifier should be provided for control circuit and power circuit
- [11] Internal Resistive and Capacitive (RC) Snubber circuit should be provided in all power circuit
- [12] Standard Thyristors assembly like (Diode, Silicon Controlled Rectifier and Insulated Gate Bipolar Transistor) should be provided on bench
- [13] Short Circuit Protection, Exhaust fan for cooling as well as proper earthing system should be provided for all circuits, test and measuring instruments/equipments
- [14] Extension board should be provided with bench
- [15] The all circuits, power supply, test and measuring instruments and relevant assembly with bench is provided on table with easy movable and locking mechanism system
- [16] The Standard accessories, Laboratory Manual, etc should be provided with Laboratory setup

Detail Technical Specifications:

- [A] Single Phase AC Power Source with MCB (Power Switch, Single Phase 10 A):
 - Main Supply (AC Power): 230 V \pm 10%, 50 Hz
 - AC Power Source using Center Tapped Transformer: 115 V - 0 - 115 V \pm 10%, 2 A
 - Low Voltage AC Power using Transformer: 18 V - 0 -18 V and 0 - 15 V
- [B] Three Phase AC Power Supply with MCB (Power Switch, Three Phases 10 A):
 - Main Supply (AC Power): 230 V Phase voltage, 415 Line voltage with 50 Hz
 - Three Phase Low Voltage Power Supply: 15V in Each Phase and 30 V Line Voltage with \pm 10%, 50Hz
- [C] DC Power Supply:

- +35 V, - 35 V with minimum 200 mA or better
- +15 V, - 15 V with minimum 200 mA or better
- +12 V, - 12 V 500 with minimum 500 mA or better
- +5 V, - 5 V 500 with minimum 500 mA or better

[D] The following meter should be provided with setup

- DC Voltmeter: 0 - 500V for DC Voltage Measurement
- DC Ammeter : 0 - 30A for DC Current Measurement
- AC Voltmeter: 0 - 500V for AC Voltage Measurement
- AC Ammeter: 0 - 30A for AC Current Measurement

[E] Power Circuit Module: The power circuit module should be consisting following components:

(1) Diode Module: The Silicon Rectifier diode has following specification:

- Low forward voltage drop, High current capability and high surge current capability
- Maximum Recurrent Peak Reverse Voltage 1000 Volt or better
- Maximum RMS Voltage 700 Volts or better
- Maximum Average Forward Rectified Current 6 Ampere or better
- Terminals of diode is connected with sockets (safety terminal) for testing and circuit connections
- Quantity required 06 Nos.

(2) Silicon Controlled Rectifier Module: The standard Silicon Controlled Rectifier should be provided with following technical specification:

- Maximum repetitive peak forward and reverse blocking voltage 600 Volt or better
- Maximum current rating Root Mean Square or Average 16 Ampere or Better
- Resistive and Capacitive (RC) Snubber Protected circuit provided with each Silicon Controlled Rectifier
- Quantity required 06 Nos.
- Terminals of all Silicon Controlled Rectifier is connected with sockets (safety terminal) for testing and circuit connections

(3) Insulated Gate Bipolar Transistor Module: The standard Insulated Gate Bipolar Transistor (with standard speed) should be provided with following technical specification:

- Maximum Collector-to-Emitter Voltage 600 Volt or better
- Maximum Continuous Collector Current 10 Ampere or better
- Resistive and Capacitive (RC) Snubber Protected circuit provided with Insulated Gate Bipolar Transistor
- Quantity required 06 Nos.
- Terminals of all Insulated Gate Bipolar Transistor is connected with sockets (safety terminal) for testing and circuit connections

[F] Firing Circuit for Controlling of Single Phase and Three Phase Power Circuit: The each Firing Circuit module consisting with standard method of controlling with suitable circuitry with standard components.

(1) Single Phase Firing Circuit:

- Ramp Comparator Firing Circuit
- Power Supply: 0 - 15 Volt (AC Supply) and +12Volt & Ground (DC Supply)
- Variable Firing Angle Control: From 30 degree to 180 degree or better
- Terminals with sockets should be provided with circuit for testing and Circuit connections

(2) Pulse Width Modulation Firing Circuit:

- Triangular Comparator Method
- Frequency Range 270 Hz to 5 KHz or better
- Pulse Width Modulation Pulse Variation (1) 0 to 90 % duty cycle or better, (2) 0 to 50% duty cycle or better
- Terminals with sockets should be provided with circuit for testing and Circuit connections

(3) Three Phase Firing Circuit:

- AC Power Supply: Three Phase Low Voltage Power supply
- DC Supply: +12V & Ground (DC Supply)
- Variable Firing Angle Control: From 30 degree to 150 degree or better
- Terminals with sockets should be provided with circuit for testing and Circuit connections

(4) Cycloconverter Firing Circuit:

- Power Supply: 18 - 0 - 18 Volt (AC Supply) and +12Volt , +5 Volt & Ground (DC Supply)
- Variable Firing Angle Control: From 30 degree to 180 degree or better
- Terminals with sockets should be provided with circuit for testing and Circuit Connections

[G] Load Setup for power circuit:

- (1) Universal motor with 1/8 Horse Power or better capacity should provided with setup as a Load
- (2) Four Nos. 200W or better Bulb should provided with setup as Lamp Load

[H] Oscilloscope with Power Scope: 25 MHz or better bandwidth, 1500Volt peak to peak (Isolated- Unearthed should provide with following technical specification on bench/setup:

Operating Modes:

Channel I, Channel II, Channel I & II, alternate or chopped modes, X-Y operation, Addition and Subtraction of Channel I and II

Vertical deflection:

Bandwidth: DC -30 MHz (-3 dB),

Input coupling: DC-AC-GND,

Input trough: BNC Connector,

Deflection coefficients: 5 mV / div. - 20 V / div

Time base:

Time coefficients: 0.5 Micro second/division -0.2second/division

Saw-tooth Output: 5 V peak to peak approximately or better

Trigger System:

Modes: Auto

Source: CH I, CH II, External

Slope: Positive or Negative

Horizontal Deflection:

Bandwidth: DC-2.5 MHz (-3 dB)

Input Impedance: 1 M Ohm Parallel with 30 Pico Farad approximately or better

X-Y mode: Phase Shift < 3 degree

Component Tester:

Test Voltage: Max 8.6 Vrms (open circuit)

Test Frequency: 50 Hz, Test circuit grounded to chassis

Continuity Tester: Beeper sounds when less than 75 ohms

Cathode Ray Tube: Rectangular tube with internal graticule.

Calibrator: Square Wave Generator 1 KHz

Standard Accessories should be provided with Oscilloscope:

[1] BNC-Test probe cable -2 no.

[2] BNC - Crocodile cable -2 no.

[3] Test Probe -2set

[4] Power cord -1 no.

[5] BNC to BNC -4 Nos.

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)
Total Cost							

Gross Total Cost (A+B): Rs. _____

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: _____