Annexure-C

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

INVITATION LETTER

IET/TEQIP-III/2019-232-J

Package Code: TEQIP-III/2019/UP/ietl/292
Current Date: 06-Jul-2019
Package Name: IET-TEQIP-EED-LAB-INSTRUMENTATION LAB
Method: Shopping Goods

Sub: INVITATION LETTER FOR IET-TEQIP-EED-LAB-INSTRUMENTATION LAB

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	MEASUREMENT OF DISPLACEMENT USING LVDT	1	Institute of Engineering and Technology, Lucknow	
2	MEASUREMENT OF DISPLACEMENT USING STRAIN	1	Institute of Engineering and Technology, Lucknow	
3	MEASUREMENT OF DISPLACEMENT USING MAGNETIC PICKUP	1	Institute of Engineering and Technology, Lucknow	
4	MEASUREMENT OF LOAD USING STRAIN GAUGE BASED LOAD CELL	1	Institute of Engineering and Technology, Lucknow	
5	MEASUREMENT OF WATER LEVEL USING STRAIN GAUGE TYPE LEVEL TRANSDUCER	1	Institute of Engineering and Technology, Lucknow	
6	MEASUREMENT OF AIR FLOW USING ANEMOMETER	1	Institute of Engineering and Technology,	

			Lucknow
7	MEASUREMENT OF TEMPERATURE BY RTD	1	Institute of Engineering and Technology, Lucknow
8	THERMOCOUPLE DEMONSTRATION SETUP	1	Institute of Engineering and Technology, Lucknow
9	STUDY OF P, PI AND PID CONTROLLERS	1	Institute of Engineering and Technology, Lucknow
10	STUDY OF STORAGE OSCILLOSCOPE & DETERMINATION OF TRANSIENT RESPONSE OF R.L.C. CIRCUIT	1	Institute of Engineering and Technology, Lucknow
11	STUDY OF STORAGE OSCILLOSCOPE & DETERMINATION OF TRANSIENT RESPONSE OF R.L.C. CIRCUIT	1	Institute of Engineering and Technology, Lucknow
12	OPTICAL TRANSDUCER TRAINER	1	Institute of Engineering and Technology, Lucknow
13	THERMOCOUPLE DEMONSTRATION SETUP	1	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 **60**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:

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 **12** months from the date of successful acceptance of items and AMC/Others is .

12. You are requested to provide your offer latest by **14:00** 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

Annexure I

Sr. No	Item Name	Specifications
1	MEASUREMENT OF DISPLACEMENT USING LVDT	➢ Excitation source :Built in AC source 2.5 KHz sine approx. ➢ L.V.D.T. :in non metallic structure ➢ Micrometer :One (for displacement) ➢ Displacement range :± 15mm ➢ Test points :Sockets at different places for signals. ➢ User controls :Two potentiometers one to adjust zero other to calibrate (span adjust) ➢ Display :3.5 digit digital ➢ Power supply :IC Regulated ➢ Phase detection :Balanced demodulator ➢ Power supply :Short circuit &overload Protected ➢ Mains :230V/50Hz AC
2	MEASUREMENT OF DISPLACEMENT USING STRAIN TYPE DISPLACEMENT TRANSDUCER	➢ Strain gauges :Four mounted upon cantilever ➢ Excitation :Stable DC voltage for strain gauge bridge ➢ Micrometer :For displacement 0-10mm ➢ Signal conditioner :OP-amp based ➢ Amplifier :Precision instrumentation amplifier with variable gain ➢ Test points :Sockets at different places for signals. ➢ Potentiometer :Two for zero & cal adjust ➢ Display :3.5 digit digital (in mm) ➢ Power supply :Short circuit &overload protected ➢ Mains :230V/50Hz AC
3	MEASUREMENT OF DISPLACEMENT USING MAGNETIC PICKUP	➢ Excitation source :Built in AC source 1 KHz sine approx. ➢ Inductive pickup :in non metallic structure ➢ Signal conditioner :OP-amp based ➢ Micrometer :One (for displacement) ➢ Displacement range :0-10 mm ➢ Test points :Sockets at different places for signals. ➢ User controls :Two potentiometers one to adjust zero other to calibrate (span adjust) ➢ Display :3.5 digit digital ➢ Power supply :Short circuit &overload Protected ➢ Mains :230V/50Hz AC ➢
4	MEASUREMENT OF LOAD USING	➢ Load cell :Strain gauge based 2.5kg ➢ Excitation :Stable DC voltage for strain gauge bridge

	STRAIN GAUGE BASED LOAD CELL	➢ Signal conditioner :OP-amp based ➢ Amplifier :Precision instrumentation amplifier with variable gain ➢ Weight :Five(each 500g) ➢ Test points :Sockets at different places for signals ➢ User controls :Two potentiometers one to adjust zero other to calibrate (span adjust) ➢ Display :3.5 digit digital Kg) ➢ Power supply :Short circuit &overload Protected ➢ Mains :230V/50Hz AC
5	MEASUREMENT OF WATER LEVEL USING STRAIN GAUGE TYPE LEVEL TRANSDUCER	➢ Load cell :Strain gauge based 2.5kg ➢ Excitation :Stable DC voltage for strain gauge bridg ➢ Water level :Two litre jar with graduation ➢ Signal conditioner :OP-amp based ➢ Amplifier :Precision instrumentation amplifier with variable gain ➢ Test points :Sockets at different places for signals. ➢ User controls :Two potentiometers one to adjust zero other to calibrate (span adjust) ➢ Display :3.5 digit digital (mm) ➢ Power supply :Short circuit &overload Protected ➢ Mains :230V/50Hz AC
6	MEASUREMENT OF AIR FLOW USING ANEMOMETER	➢ Transducer Speed :Axially mounted free rotating cups ➢ Sensor :Photo diode ➢ Measurement Signal :Through light intruppt method ➢ Conditioner :Bias network ➢ Test points :Sockets at different places for signals. ➢ Display :4 digit digital counter m/sec flow indicator ➢ Power supply :Short circuit &overload Protected ➢ Mains :230V/50Hz AC
7	MEASUREMENT OF TEMPERATURE BY RTD	➢ RTD :PT-100 ➢ Heating arrangement :Electrically heated oven +90□ C ➢ Circuit interface :Wheatstone bridge circuit for transducer ➢ Amplifier :Differential with feedback ➢ Thermometer :Glass (110□) for reference ➢ Test points :Sockets at different places for signals ➢ Potentiometer :Two (ambient & span adjust) ➢ Display :3.5 digit digital ➢ Power supply :Short circuit &overload Protected ➢ Mains : 230V/50Hz AC

8	THERMOCOUPLE DEMONSTRATION SETUP	➢ Thermocouple :J ➢ Heating arrangement :Electrically heated oven +90□ C ➢ Circuit compensation :in built cold temperature junction ➢ Amplifier :Differential with feedback ➢ Thermometer :Glass (110□) for reference ➢ Test points :Sockets at different places for signals. ➢ Potentiometer :Two (ambient & span adjust) ➢ Display :3.5 digit digital ➢ Power supply :Short circuit &overload Protected ➢ Mains :230V/50Hz AC
9	STUDY OF P, PI AND PID CONTROLLERS	➢ Simulated block-dead time (transportation leg), integrator, Time constants, error detector and gain. ➢ PID Controller (configurable as P, PI, PD or PID) ➢ Proportional Band : 5% to 50% (Gain 2-20) ➢ Integral Time : 10 ms – 100 ms ➢ Derivative time : 2-20 ms ➢ Built in IC regulated power supply. ➢ Built in 3½ digit DVM ➢ Built in signal sources. ➢ Set value : -1V to + 1V ➢ Square wave 1 V p-p (min) at 40 Hz (typical) ➢ Triangular wave : 1 V p-p (min) at 40 Hz (typical) ➢ Detailed literature and patch chords included ➢ 220V, 50 Hz mains operations
10	STUDY OF STORAGE OSCILLOSCOPE & DETERMINATION OF TRANSIENT RESPONSE OF R.L.C. CIRCUIT	(a) Experimental setup to study of Transient Response of RLC Circuit.
11	STUDY OF STORAGE OSCILLOSCOPE & DETERMINATION OF TRANSIENT RESPONSE OF R.L.C. CIRCUIT	Digital Storage Oscilloscope 50 MHz, Dual Trace, TFT Screen Sampling 500Ms/s Agilent Make.
12	OPTICAL TRANSDUCER TRAINER	➢ L.D.R. :One ➢ Photodiode :One ➢ Photo Transistor :One ➢ PV CELL :One ➢ Lamp :12V/21W tungston lamp with intensity control (continuously variable).

		➢ DC supply :Variable 0-20V ➢ Circuit :Photoelectric relay ➢ Selector switch :Three mode for display ➢ Display :Three 3.5 digit digital 1. Digital ammeter 0-2A 2. Dual range 0-2000uA & 0-20mA 3. Digital dual range 0-2V & 0-20V ➢ Power supply :Short circuit &overload Protected ➢ Mains :230V/50Hz AC
13	THERMOCOUPLE DEMONSTRATION SETUP	➢ Thermocouple :K ➢ Heating arrangement :Electrically heated oven +90□ C ➢ Circuit compensation :in built cold temperature junction ➢ Amplifier :Differential with feedback ➢ Thermometer :Glass (110□) for reference ➢ Test points :Sockets at different places for signals. ➢ Potentiometer :Two (ambient & span adjust) ➢ Display :3.5 digit digital ➢ Power supply :Short circuit &overload Protected ➢ Mains :230V/50Hz AC

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. _____