



राजकीय इन्जीनियरिंग कालेज

कटरिया याकूबपुर, अम्बेडकर नगर (उ०प्र०) – 224122 भारत



Rajkiya Engineering College

Katariya Yakooobpur, Ambedkar Nagar, (U.P.) – 224122 Cell Phone: 91-9454439590

AICTE APPROVED GOVERNMENT ENGINEERING COLLEGE Website: www.recabn.ac.in

VIDE APPROVAL LETTER No. F. No. Northern/I-3511948247/2018/EOA DATED: 30-Apr-2018 E-mail: director@recabn.ac.in

Affiliated to Dr. A.P.J. Abdul Kalam Technical University Lucknow, U.P., India

RECABN/TEQIP-III/2020/ 491

Date: 14/02/2020

INVITATION FOR QUOTATION FOR ELECTRICAL WORKSHOP LAB

To,

Dear Sir,

You are invited to submit your most competitive quotation for Electrical Workshop lab for the Rajkiya Engineering College, Ambedkar Nagar. In this connection, submit your financial offers/quotation as per the product in the given format in Annexure-II for Electrical Workshop lab. The details of specifications are given in Annexure-I

Sr. No	Name of Particular/ Product/Package Brief Description	Quantity	Place of Delivery	Installation Required
1	Electrical Workshop Lab As per specification (Attached in Annexure-I)	04	Rajkiya Engineering College, Ambedkar Nagar	YES

Government of India has received a credit from the International Development Association (IDA) in various 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.

Instructions:


1. The quantity of the items is as mentioned above.
2. The bidders should quote their offer/rates in package and not for individual items with clear terms without any ambiguity.
3. The Institute will select bidder who has offered the lowest aggregate cost for complete set of items.
4. All duties, taxes and other levies payable by the bidder shall be included in the total price.
5. The rates quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
6. Each bidder shall submit only one quotation.
7. The cost should be quoted in Indian Rupees only.
8. Quotation/Offer shall remain valid for a period not less than 45 days after the last date of submission.
9. For the said product warranty should be at least two years/ onsite manufacture warranty.
10. The last date of submission of offer is **28/02/2020 by 5:00 PM.**
11. The quotation will be open on **29/02/2020 at 3:00 PM.**
12. Sealed quotation to be submitted/ delivered at the address mentioned below:


Quotation (In the name of)	Delivery Address
<u>TO</u> <u>DIRECTOR</u> <u>RAJKIYA ENGINEERING COLLEGE</u> <u>AMBEDKAR NAGAR</u> <u>PIN CODE-224122, UTTAR PRADESH</u>	<u>TEQIP-III OFFICE</u> <u>RAJKIYA ENGINEERING COLLEGE</u> <u>AMBEDKAR NAGAR</u> <u>PIN CODE-224122, UTTAR PRADESH</u>

13. Bidders should mention at the top of envelop:

Quotation for Electrical Workshop lab Under TEQIP-III (in bold)

14. Make & Model should be specified, and material should be standard.
15. Submit a GSTIN registration and PAN copy of firm duly signed.
16. Delivery of the said items should be within 45 days from the date of P.O.
17. Payment shall be made in Indian Rupees as per P.O. no advance will be paid for the said.
18. Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the process and reject all quotations at any time prior to the P.O.
19. Postal or courier delay will not be considered, and the bid received late will be rejected.


Indenter


(TEQIP-III Coordinator)

Technical Specification
Electrical Workbench

Annexure-I

Study Table/Work bench should be anti-static and working with PC interface to analyze the power parameters with intelligent software. Each table should be able to communicate through LINUX KERNEL technology with touch screen and remote monitoring using Cloud, should be able to do power analysis.

16 gauge MS square tube (Heavy duty) frame Colour: Off white,

Powder coated 18 mm thick tabletop. Study table Dimensions: 1500mm(L) x 755mm(W) x 1410mm(H)

Drawers dimension should be in center of table –

Upper, Middle and Lower: 410 mm (L) x 410 mm (W) x 210 mm (H)

Castor wheel with locking mechanism bottom legs should be provided.

Table should have facility of rare cover removal using wing nut.

6 separate sets of 5 Amp switch & one 5 pin 3 phase socket, Protective Socket with 4 pole MCB Neon indicators should be provided on the front facing.

3 phase direct on line Starter: (Contactor 12A) with thermal relay 6A, R-Y-B inputs indicators, Manual start / stop with local trip contact

3 Phase Auto Transformer: 0 - 440V / 5A, Voltage : 0 - 440V., Current : 5A.

1 phase Auto Transformer: 0 - 440V, Current : 5A

Single Phase Microcontroller based on line parameter Analyser:

Display: LCD Display with backlite, Voltage : 0 to 300V, Current: 1A/5A range

Measurement: Energy ,V, A, Hz, PF, KW, KVA, KVAr

Single phase MCB: with line input Neon indicator: (02 Nos.)

Three Phase Microcontroller based parameter Analyser:

Display : LCD Display with backlite, Voltage : 400VAC, Current: 1A/5A range

Measurement : Power , Energy ,V, A, Hz, PF, KW, KVA, KVAr

Regulated DC Power Supply: Consisting of 2 Meters select to read voltage/current of each output for dual power supply (0-30V). Output Current: Max rated current with overload RED LED indication.

Unregulated variable DC supply 0-200VDC/2A, Voltage: 0-200VDC variable current 2A

Digital Oscilloscope: Signal –bandwidth: 70MHz, Real -time sampling rate: Max.1 Gsa/s, Equivalent sampling rate Max.50 GS/s, 7.0" TFT LCD Color display, 2 Mpts memory depth, Independent vertical scale & position control knobs for each channel, Edge, Pulse Width, Video, Slope, Alternate trigger mode Math functions including add, Subtract, Multiply, Divide & 1024 point FFT, 32 parameters of automatic measurements, Unique Digital Filter & waveform recorder function, Advanced cursor



modes: Manual, Auto & Track, Waveform Intensity & Grid Brightness can be adjusted, PASS/FAIL detection, PASS/FAIL output, Built-in 70 MHz hardware frequency counter, Save/recall types: Setups, Waveform, CSV file, Picture, Standard Interface, USB Host: Support USB Flash driver save /recall function & update firmware, USB Device: Support PictBridge compatible printer & support PC remote control, RS232, Pass/Fail Output

Sampling System

Real Time Sampling: 1Gsa/s

Equivalent Sampling: 50 Gsa/s

Memory Depth: 2M points

Vertical Resolution: 8 Bits

Sampling Mode: Sample, Peak detect, Averaging, Roll Mode

Auto Scale: Automatically set vertical scale (V/div), time base (s/div), and trigger mode

Vertical System

Channels: 2 analog input channels

Bandwidth: 70MHz

Coupling: DC, AC and GND

Bandwidth Limit (-3dB): 20 MHz

Calculated Rise Time : < 5.0ns

Vertical Scale: 2mV/div to 10 V/div 1-2-5 steps

Vertical Gain Accuracy: 2mV/div Variable Gain Ranges :<±4%

5mV/div to 10 V/div in Fixed Gain Ranges :< ±3%

Vertical Offset Range: 2 mV -200 mV: ±1.6 V 206 V-10V: ±40V

Overshoot: <10% with probe or BNC input into 50 Ω

Probe Attenuation Factors Set: x1, x5, x10, x50, x100, x50, and x1000

Input Impedance: 1MΩ±2% ||16 pF ±3 Pf

Max. Input Voltage: 400V (DC +AC pk pk 1 MΩ input impedance, X 10), CAT I

Horizontal System

Time Base Range: 5ns-50 s/div

Scan: 100 ms~50s/div (1-2.5-5 sequence)

Horizontal Mode: Main, Window, Window Zoom, Roll, X-Y

Time Base Accuracy: ±100 ppm measured over 1ms interval

XY Mode: Input X: Channel 1, Y: Channel 2

Bandwidth: 70MHz

Trigger source: CH1, CH2,EXT, EXT/5, AC Line

Trigger mode : Auto, Normal, Single

Trigger Coupling: DC, AC, LF-reject, HF-reject

Trigger Type: Edge, Pulse Width, Video, Slope, Alternative

Trigger Level Range: Internal: ± 6 div from screen centre; EXT: ± 1.2 V; EXT/5: ± 6 V

Trigger Sensitivity: DC-10 MHz: 1 Div, 10 MHz -Max. BW: 1.5 Div;

EXT: DC-10 MHz: 200 mVpp, 300 mVpp 10 MHz-Max. BW;

EXT/5: DC-10 MHz: 1 Vpp, 10 MHz-Max. BW: 1.5 Vpp

Signal Measurement Parameters: Vpp, Vmax, Vmin, Vtop, Vbase, Vavg, Mean, Crms, Vrms, ROV
Shoot, FOV Shoot, RPRE Shoot, FPREShoot, Rise time, Fall time, Freq, Period, +Wid, -Wid, _Dut, -
Dut, Bwid, Phase, FRR, FRF, FFR, FFF, LRR, LRF, LFR, LFF

Math Functions: Add, subtract, multiply, divide & 1024 point FFT

Window : Hanning, Hamming, Blackman, Rectangular

Cursor Measurement: Manual, Auto Track

Hardware Frequency Counter: DC Coupled, 10 Hz to Max. BW, **resolution:** 1 Hz; Accuracy $\pm 0.01\%$

Storage & Interface

Storage: Internal: 2 reference waveform, 20 setup files & 10 captured waveform files USB: Setup,
waveforms, CSV file, BPM

Interface: USB HOST, USB DEVICE, RS232C & PASS/FAILK OUT

Display System

Display Screen: TFT LCD display, 7.0"

Resolution: 480(horizontal) x 234(vertical) pixels

Color: 24 bit

Wave form Display

Scale: 8x18 div

Type: Dots, Vector

Interpolation: (Sinx)/x, Linear

Persistence: Off, 1 sec, 2 sec, 5 sec, Infinite

General Information

Operating Condition: 10°C to 40 °C, $\leq 85\%$ RH

Power: 100-240 VAC, CAT II, 45 Hz TO 440 Hz

Power Consumption : ≤ 50 VA

Dimension : W: 323, D: 136, H: 157 (mm)

Weight: 2.5 Kg (Approx.)

Accessories: Probes (2Nos.), Power Cord, USB Cable, Software CD

5 MHz Function Generator: Operating Modes: Sine, Square, Triangle, DC, Free running, Internal
sweep or external frequency modulation, with or without DC offset, with mode and frequency display.,

Puneet Singh

Frequency Display Accuracy: upto 5Hz: $\pm(1\% + 3D)$, Output: Short circuit proof, 10Vpp into 50 Ω , max 20Vpp open circuit, Attenuation: max 60dB, 2 steps: 20dB \pm 0.2dB each, Frequency Modulation-FM Input: Connector on rear panel., Display: Backlit LCD, 4 digit frequency value display

LCR Meter: Comprehensive range of functions, L, C, R, Z, Q, D, theta, Measurement accuracy 0.25%, Test frequency standard 100 Hz / 1 kHz, Auto ranging & Auto computing, Front panel zero compensation Test Frequency: 100Hz/1KHz, Display: 4 Digits, 12.5mm, 7 Segment, LED Measurement Ranges : Auto/Manual

Digital multimeter : DC Voltage: 400mV to 1000V $\pm(0.5\%+4)$,

AC Voltage : 400mV to 750V $\pm(0.8\%+10)$ DC Current : 400uA to 10A $\pm(1\%+10)$,

Current : 400uA to 10A $\pm(1.5\%+10)$, Resistance: 400 Ohm to 1M \pm $\pm(0.8\%+4)$,

Capacitance: 4nF to 200uF $\pm(2.5\%+20)$, Frequency: 100 Hz to 1MHz $\pm(0.5\%+10)$,

Celsius -20 to 500 $\pm (1.0\%+5)$, True RMS, Diode, Transistor, Continuity buzzer, Low battery indication, Data Hold, Auto power off, Analog bar graph, Shockproof protection, Display 3999, LCD Size 65 \times 35mm.

All ac, Hz, and duty cycle are specified from 1% to 100% of range. Inputs below 1% of range are not specified.


Typically, open circuit test voltage is 2.0 V and short circuit current is < 0.6 mA.

Specifications do not include errors due to test lead capacitance and capacitance floor (may be up to 1.5 nF in the 40 nF range).

Typical means when the frequency is at 50 Hz or 60 Hz and the duty cycle is between 10% and 90%.

Function: Overload protection, Input impedance (Nominal), Common mode rejection ratio,

Soldering Unit, PCB Clamper, LENS Table lamp, Bench Vice, Electrical toolkit.



Annexure-II

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. _____