

Government Polytechnic Nanded

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No. GPND/Store/2023-24

987

Date :-

05 FEB 2024

Quotations should reach on or before:- Date:- 13-02-24 upto 4.00 PM

Subject:- Quotation for supply of Medical Electronics and Electronics devices

Dear Sir,

You are requested to send your quotations subject to the following conditions, in a sealed envelope, for following work.

Terms and Conditions: -

1. The quotations received in open, unsealed, incomplete or mutilated condition may be rejected.
2. The net rate for each item including various taxes as applicable along with packing, forwarding, freight/transportation charges should be stated separately. Otherwise, it will be presumed that the rates include all these charges, expenses etc. and are for delivery F.O.R. Nanded.
3. The rates should be valid from the date of opening of the quotation to up to at least 3 months or max up to 31/03/2024. If your items have specifications different from those stipulated, the details of make of item and photograph indicating its physical layout etc. should be included wherever necessary.
4. Technical literature containing information about specifications, make, pictorial views, name of manufacturer etc. should be supplied along with the quotation, and otherwise it will not be compared.
5. Samples should be supplied wherever necessary.
6. The undersigned reserves the right not to consider the quotation in the absence of the detailed information of about the items.
7. In case of machinery, equipment, apparatus, instrument. etc. maintenance manual, demonstration etc. may be required before finalizing the order for supply of the stores.
8. The undersigned reserves the right (a) to reject the quotation in part or full (b) to extend the date of opening of the quotation and (c) to cancel the quotation in part or in full, without giving any reason.
9. If the quotation is accepted, the stores should be supplied at the destination / at the premises on or before the date mentioned in the order.
10. The bills of the stores or invoice in triplicate should be sent directly to the undersigned by hand delivery or by registered post.
11. Stores which are damaged, deficient or not in accordance with the stated specifications will have to be collected back by the supplier at his own cost and own risk or otherwise appropriate charges for such shortcomings may be deducted from the bill by mutual consultation.

12. The stores should be insured with the govt. insurance authority for transit risk. The supplier may pay the premium and the same may be charged in the bill separately.
13. The payment of the bill will be released only after the satisfactory completion of work / supply order.
14. GST / Registration. No. is essential on the quotation and bills.
15. The undersigned shall not incur any liability to pay interest for delayed payment of the bill for any reason.
16. Any deviation from any of these conditions should be conveyed to the undersigned before accepting the order for supply of the stores.
17. Reference of quotation no. should be made in all future correspondence.
18. If necessary, demonstration should be given before date of supply order.
19. Rates for spares and repair charges shall be quoted separately.
20. In case of maintenance work Tentative list of machinery for maintenance work, if any may be attached herewith. You have to fill the quotation after due inspection on the site during office time for checking such machines.
21. No TA/DA and professional charges will be paid for inspection of machines for submitting the quotation.
22. Orders shall be placed only as per budget availability.
23. The work should be done by licensed contractor for electrical work and licensed copy should be attached along with quotations in case of electrical work if any.
24. The warranty for the equipment should be as specified. AMC charges, if any should be clearly mentioned.
25. Prescribed guarantee /warranty shall be mentioned clearly in a quotation.



Principal

Govt. Polytechnic, Nanded

Copy to :-

1. To Website of institute
2. Notice board of institute
3. Students co operative store of institute

Sr.No.	Particulars	QTY	Estimate Rate in Rs/-
01	12 Lead ECG Simulator It should have following features: <ul style="list-style-type: none"> • Provides amplified ECG output with P, Q, R, S, T, U waves. • Compatible with ECG cum Heart Rate Monitor • Provides in-depth study of Standard Unipolar and Bipolar Leads Configuration for ECG measurement Variable Heart-rate generation from 30-300 heartbeats/minute • Variable ECG amplitude 200mV – 4V DC • Every Systole indication by LED and audible (Buzzer) 	01	19100.00
02	Understanding of Electro-myograph It should have following features: <ul style="list-style-type: none"> • Separate test-points to observe waveforms after each block • Provides amplified real time EMG output • Inbuilt EMG Simulator • Provides information about 10 simulated EMG outputs • Visible LED indication for all the simulated EMG outputs 	01	21600.00
03	Electroencephalograph Simulator It should have following features: <ul style="list-style-type: none"> • Provides amplified simulated EEG output of different brain configurations • Separate test-points to observe waveforms after each block • On board Variable gain control facility • EEG Simulator also explains the significance of frequency ranges of Delta, Theta, Alpha and Beta generated on scalp 	01	20950.00
04	Study of Phonocardiograph System It should have following features: <ul style="list-style-type: none"> • Easy to operate with minimum use of accessories • Provides amplified audible (Headphone) and visible output (Software) • Separate Test-Points to observe Waveforms after each Block • USB interface with PC • Real time PCG Acquisition Software for waveform analysis 	01	23350.00

05	Heart Rate Measurement (Transmission Method) It should have following features: <ul style="list-style-type: none"> • Amplified pulse output provided • On board variable gain control facility • Separate test points to observe waveform after each block 	01	20750.00
06	Blood Pressure Measurement (Oscillometric method) It should have following features: <ul style="list-style-type: none"> • Provide accurate value of systolic and diastolic pressure • Separate test points to observe the waveform after each block • Provide LCD display facility • Korotkoff sound can also be detected using headphone • Oscilloscope can be used to observe the waveform • Specially designed for educational purpose 	01	27750.00
07	Pacemaker Simulator It should have following features: <ul style="list-style-type: none"> • Provides amplified normal Sinus rhythm output with P, Q, R, S, T waves • Provides information about 10 abnormal (diseased) waves which indicates particular abnormality in heart • Provides information about 10 corrected wave which indicates possible wave shapes after Pacemaker action • Provides information about Pacemaker modes (Single/Dual) of operation • Provides information about single as well as dual chamber pacing/sensing of heart • Every Systolic action of heart is indicated by LED and audible (Buzzer) sound controls. 	01	19100.00
08	Experimentation with Transistor Characteristics It should have following features: <ul style="list-style-type: none"> • In-built Ammeter and Voltmeter are provided • On board Fixed and Variable DC Power Supplies are provided • Digital display for displaying Voltage and Current • Three important characteristics of a Transistor can be performed on this board :- Input characteristic- Output characteristic- Constant current transfer characteristic 	01	15900.00
09	Experimentation with Zener Diode Voltage Regulator It should have following Technical Specification: Transformer : 0 - 9V, 500mA (approximate), Filter : Capacitive 1000 μ F, 35V Zener Diode : V = 5.6V \pm 1 ZM = 178mA, ZM Potentiometer, P1 : 4.7kW Potentiometer, P2 : 4.7kW Mains Supply : 230V \pm 10%, 50Hz	01	8400.00
10	Study of Op-Amp Characteristics It should have following features: <ul style="list-style-type: none"> • On board Function Generator • Functional blocks indicated on board mimic • Built in DC Power Supplies It should have following Technical Specification: Function Generator Outputs : Sine, Square and Triangle Frequency : 10 Hz, 100 KHz DC Power Supplies : 0 - 5 V variable, 2 Nos. Test Points : 28 nos Power Supply : 110-220 V \pm 10%, 50Hz	01	15900.00
11	Electronics Workbench An integrated workbench consisting of instrument panel and working table should suitable for students to learn and perform various experiments of electronics and electrical related subjects. Instruments should internally electrically connected and should be fitted in the panel such that only front panel and necessary interfaces are easily accessible to use. Structure of workbench should be made up of 1.5	01	299850.00

Structure and design of Workbench should follow the below specifications:

The basic structure should be made of 38 x 38 x 1.5 mm CRC powder coated pipes for sturdiness. The overall dimensions of Workbench should be not less than W = 1200 mm D = 750 mm; H = 1150 mm MS drawers 03 numbers W = 275 mm; D = 375 mm; H = 100 mm and thickness 1.2mm with handle & separate lock on each drawer should be provided For the panel section, raised back height of 1200mm from floor with matching height support from the side at a depth 500mm for instrument housing with a MS Panel strip below it for housing Electrical Sockets and Switches for external use.

Two Pole MCB (16A – Havells / Siemens) to be provided for safety of Workbench
Workbench should work on Mains Supply - 230V AC, 50 Hz

Technical specifications of instruments and facility to be installed on the Workbench should be as under:

Workbench should have the following key features:

1. 50MHz, Four Channel Digital Storage Oscilloscope
2. 10MHz Function Generator with Arbitrary Waveforms ,AM, FM,PM,FSK Modulation and Built-in 200MHz Frequency Counter
3. Dual Tracking DC Power Supply
4. Soldering / Desoldering Station
5. 3 ¾ Digital Multimeter

Technical Specifications / features fitted with workbench should be as under: 50MHz, Four Channel Digital Storage Oscilloscope

The Digital Storage Oscilloscope should have Analog 50 MHz, 4 channel , Max. sample rate : 1GSa/s (Single-channel), 500MSa/s(Dual-channel), 250MSa/s, Digital channel: 1 GSa/s
Waveform Capture Rate-30,000 wfms/s.; Std. Probes: 4 sets.

2. 10MHz Function/Arbitrary Waveform Generators

It should have following features: DDS technology Single-channel output

125MSa/s Sample Rate Frequency resolution 1mHz Display 4" colour LCD. Vertical resolution 14 bits Modulation functions: AM, FM, PM, FSK, sweep, burst. **Specifications:** Frequency Range: Sine: 10Hz -10 MHz

Square: 1 Hz -5 MHz Pulse: 1 Hz -1 MHz Ramp: 1 Hz -1 MHz White Noise: 5 MHz bandwidth (-3 dB) (typical) Output channels: 1 no. Frequency resolution: 1Hz Vertical resolution: 14bit
Standard waveforms: Sine, square, ramp, pulse, and noise Arbitrary waveforms: Sinc, staircase, staircase U, staircase D, etc.

3. Dual Tracking DC Power Supply

Specifications: Floating DC Supply Voltages DC: 0 to ± 30 V, /2 A and 5 V/2 A

Automatic Overload (current) Protection Constant Voltage & Constant Current Operation
Digital Panel Meter for Voltage and Current

Adjustable Current Limiter; 100 mA-2 A Excellent Line & Load Regulation

Low Ripple Voltage Current Limit : 100 mA-2 A Adjustable Resolution : Voltage : 100 mV;

Current : 10 mA Internal Resistance : ≤ 10 mW (30V); \leq

0.6 mW (5 V)

4. Soldering & De soldering Station

Soldering Operation: Power Consumption: 60W Input Voltage: 170-270V

Temperature Range:180-270°C Temperature accuracy: $\pm 1^\circ\text{C}$

	<p><u>De Soldering Operation:</u> Power Consumption: 70W Input Voltage: 170-270V Temperature Range: 180-480°C Pump: Diaphragm Type.</p> <p>5. Digital Multimeter (3 ¾ digit) ,4000 Counts</p> <p>LCD Display, 4000 counts, Auto operation, Diode test, Transistor test, Continuity test, Low Battery indication, Data hold, Auto power off, Function protection, Shock protection, Relative value measurement, Frequency / Duty measurement Measure AC, DC Voltage & AC, DC Current, Resistance, Capacitance, Temperature, Frequency Technical Specifications: DC Voltage range: upto 1000V DC Current range: upto 10A AC Voltage range: upto 750V AC Current range: upto 10A Resistance range: upto 40Mohm Capacitance range: upto 200microF</p>	
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