

Sub: Quotation for procurement of Instruments for Electronics Laboratory for B.Tech (Marine Engineering) course at IMU-Kolkata Campus

Sealed quotations are invited towards procurement of some instruments for Electronics Laboratory for conducting B.Tech (Marine Engineering) course at IMU-KC. The details of the equipments are as follows:

Group –I**BASIC ELECTRONICS LABORATORY:**

Sl. No.	Items	Quantity
1.	Analog type Voltmeter (0v to 24 v)	2
2.	Analog type Ammeter (0A to 1A) and Analog type Ammeter (0A to 500mA)	1+1=2
	CRO (0 Hz to 2 MHz)	2
3.	Chargeable Battery	9
4.	Battery charger (9V and	1
5.	Clamp meter (0 to 20 A)	1
6.	V-I characteristics of a p-n junction diode Kit (with analog type meter)	1
7.	V-I characteristics of a Zener diode kit (with analog type meter)	1
8.	V-I characteristics of a LED kit (with analog type meter)	1
9.	To study charging & discharging action of a Capacitor kit	1
10.	To study full wave & half wave rectification circuit with L,C, Pie filter & without filter set up	1
11.	To determine band gap of a semiconductor using four probe method	1
12.	V-I characteristics of a high current (6A or more) p-n junction diode kit	1
13.	Realization of Basic & Universal Logic gates – Logic Board Trainer	1
	characteristics of a thermistor kit	1
14.	To determine of input /output characteristics of a Transistor CE amplifier kit	1
15.	To study the clipping & clamping circuit using diode – kit	1

ELECTRONICS LABORATORY:

Sl No	Items	Quantity
1.	To study the frequency – gain response of a RC coupled amplifier kit –	02
2.	To study Transistor bias stability kit-	01
3.	To study Transistor feedback amplifier kit –	01
4.	Constructing a voltage regulator at given circuit parameter & study it's response at no load & loaded condition . – loose components –	10
5.	To study integrated circuit OP-AMP. (Adder , Sub tractor , integrating, differentiating , inverting , non-inverting) kit – (Using IC 741)	02
	Realization of J-K, R-S, D & T flip- flop Logic Training Board -	01
7.	Realization of 3 bit counter (Logic training Board)	01
8.	Determination of V-I characteristics of a JFET kit- (Using analog meter)	01
9.	To study V-I characteristics of SCR - kit – (Using Analog meter)	
10.	To Study Amplitude Modulation of a given modulating & modulated signal specification . Also determine Modulation Index Kit –	02
11.	To study wave nature of pulse code modulation kit –	01
12.	Function Generator – (0-20 MHz range, Sine ,Triangular, Square Waves)	02

Group - II

COMPUTER MICROPROCESSOR & PLC LABORATORY

Sl No	Items	Quantity
	PLC	
1.	PLC TRAINER KIT – (P,PI,PD,PID CONTROLS) – SIEMENS (with transparent transmission line (hydraulic and components)	01
2.	PLC TO INPUT/OUTPUT DEVICE INTERFACE - SIEMENS <ul style="list-style-type: none"> • (With Digital input – Analog Output, Analog Input – Digital Output , Analog input – Analog Output, Digital input – Digital Output) • Motor Drive, 	01each
3.	SPEED CONTROL OF A MINI DC MOTOR USING DAC - SIEMENS <i>(All of the above mentioned should be run by keil cross compiler)</i>	01

Group - III

MICROPROCESSOR

Sl. No.	Items	Quantity
01.	8085 DYNA KIT –	06
02.	Speed control of mini DC motor using 8085	02

MICRO CONTROLLER

Sl.No	Items	Quantity
01.	8051 MICROCONTROLLER programmer and online debugger (using JTAG /USB)) using cross-compiler (such as KEIL or equivalent)	01
02.	Interfacing with keyboard, mini printer and stepper motor	01

Terms & conditions :

- (i) The rates quoted should be comprehensive and inclusive of all taxes, delivery charges, installation, commissioning and trail run.
- (ii) Last date of submission of quotation is 17.02.2017
- (iii) The quotation is to be submitted in sealed envelope clearly subscribing “Quotation for procurement of some instruments for Electronics Laboratory for conducting B.Tech (Marine Engineering) course” and deposit the same addressing to the Director at Indian Maritime University, Kolkata – 700 088.
- (iv) The Equipment should be delivered and installed within the period as specified in the purchase order and be ready for use within 4 weeks of the issue of purchase order unless otherwise prescribed. If the bidder fails to deliver and place any or all the Equipments or perform the service by the specified date, penalty at the rate of 1% per week of the total order value subject to the maximum of 10% of total order value will be deducted.
- (v) Delivery of the above items should be made at IMU - Kolkata Campus at P-19, Taratala Road, Kolkata 700 088 on door delivery basis.

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- (vi) Rates quoted should be valid for a period of 3 months from the last date of submission of the bids. Other than the increase in taxes imposed by statutory authority, no change in the rate is acceptable during the period.
- (vii) Conditional bids will not be accepted.
- (viii) Payment will be made through Bank Transfer. 100% payment will be made for Group I & III and 90 % for Group – II after successful delivery, installation, commissioning and trail run of the equipment. Remaining 10 % of Group – II will be paid after 90 days warranty obligation of the supply of above mentioned items.
- (ix) Warranty period for the items should be mentioned clearly.

Amulya 03/2/17
O.I.C. - Purchase