I.K.G. Punjab Technical University, Kapurthala Department of Applied Sciences (Main Campus)

By Registered / Speed-post

Ref. No IKGPTD. AS 3.858

. Date: 24.11.2022

Website copy

Ms.....

Subject: Quotation for Semiconductor Lab equipment at IKGPTU, Main Campus

Dear Sir/Madam,

University intends to purchase the equipment for the Semiconductor Lab in Department of Applied Sciences by inviting sealed quotations. The supply order will be placed to the firm offering the lowest rates equipment/setup wise. Therefore, you are requested to send the sealed quotation of the equipment/setups by quoting lowest rates (inclusive of all taxes, govt levied duties, etc.) through registered/speed post or by hand. Please subscribe on envelop "Quotation for procurement of setups for Semiconductor Lab in Department of Applied Sciences" and to be opened by committee only. Quotation must reach in the office of Head of Department, Department of Applied Sciences, CB-III, I.K. Gujral Punjab Technical University, Jalandhar-Kapurthala Highway, VPO-Ibban, Kapurthala-144603, upto 3P.M. 19.12.2022. Quotation will be opened in the office of Head of Department of Applied Sciences at 4.00 P.M. on the same day. The vendors or their representatives may be present at the time of opening of the quotations. If Government of Punjab/IKGPTU declares holiday on this day quotations will be opened on the next working day. Specification of the items are as per attached Appendix-A.

Terms and Conditions:

- Bidder is at liberty to quote rates of one or more setup(s)/item(s)/make(s) etc. There is no compulsion to quote the rates of all setup(s)/item(s)/make(s), etc.
- 2. The firm having GST number need only apply.
- 3. Any quotations other than the specifications mentioned will not be considered.
- 4. Bidder should quote the rates inclusive of two years comprehensive warranty.
- 5. University reserves the right to buy/not to buy/increase/decrease any of the setup(s) quantity.
- 6. The items are to be delivered at Department of Applied Sciences, CB-III, I.K. Gujral Punjab Technical University, Jalandhar - Kapurthala Highway, VPO - Ibban, Kapurthala, within 28 days of issuance of the supply order.
- 7. No advance payment will be made.
- 8. University will not be paying anything extra as the quotations invited are inclusive of all taxes/Govt. levied duties/transportation charges etc.
- 9. The payment will be released only after the receipt of satisfactory report from the Department of Applied Sciences in terms of successful installation and demonstration of supplied equipments from the vendors.

Chairperson-Committee Department of Applied Sciences

Appendix -A

Following are the specification of the equipment required for the Semiconductor Lab in the Department of Applied Sciences.

S.No.	Name of setup	Technical Specifications	Qty
1.	Setup to study the characteristic of Ge-Si junction diode	Mains power : 230V, AC ±10% DC power supply : +12V Ammeter Range : 1µA to 200mA Voltmeter Range : 1mV to 200V	02
		Semiconductor diode- Ge-Si, with Display	
2.	Setup to analyse the	Mains Supply : 230V ±10%, 50Hz	02
	suitability of a given Zener	Transformer: 0 - 9V, 500mA (approximate)	
	diode as a power regulator	Filter : Capacitive 1000mF, 35V	
		Zener Diode : $V = 5.6V$, $I = 178mA$	
		Potentiometer, P1: 4.7k ohms	
		Potentiometer, P2: 4.7k ohms	
3.	Setup to find out the	Solar Panel : Consists of 6 solar cells	02
	intensity response of a	Maximum Voltage of each solar cell: 1.5V	
	solar cell	Maximum Current of each solar cell: 150mA	
1.1.1.1		Voltmeter : 0-10V	-
		Ammeter : 0-500mA	
		Potentiometer : 5K onms	
		Pulb 1 2V 270mA	
		Ean: $1.5V, 2700A$	
1	Satur to find out the	Power supply : $230V \pm 10\% 50 \text{ Hz}$	02
т.	intensity response of a LED	Transmitter Wavelength (nm): 565 nm (For Green	02
		light)	
		LED Rotation : 0 -360 degree with resolution of 1	
		dearee	
		Transmitter circuitry : LED	
		Wavelength (nm) : 700 nm (For Red light)	
		Wavelength (nm) : 430 nm (For Blue light)	
		Receiver Wavelength (nm): 940 nm	
		Receiver circuitry: Silicon phototransistor & Zero	
		adjustment circuit	
5.	Setup to determine the	Mains : 230V ±10%, 50 Hz	02
	energy band gap of a Ge/S	DC Power Supply	
	semiconductor.	+15V, 2.5A	
		H=5V, U.5 A	
		Switch 1 Polo 2 Ways	
		Toggle Type DPM Type: I CD Display	
		Oven Height: 77 mm	
		Width : 74 mm	
		Coil : Nichrome Wire	
		Thermometer : Graduated scale up to 100°C	
		Fuse: 0.5A	
6.	Setup for measurement of	Length of wire: 88cm(approx.)	03
	AC frequency using electric	Weights: 1gm,2gm,5gm	
N	vibrator	Power supply: 230V ±10%,50mA	
		AC power supply: 6V, 500mA	
1.19	d.	No of Turn: 800	
plu		Wire dimension(mm):0.404	
		Max. Current (amp.):0.363	
and the second second			

7.	Setup to determinethe Four Probes Contacts: Spring loadedresistivityofa Space between Probes : 2 mm ±2%semiconductorbyfour Probes : Collinearprobe method.Sample Material : Germanium Crystal Type : P typeOven:Maximum Temperature: 200°CHeater Resistance : 37VHeater Voltage : 45 V (approx.)Measurement Unit LCD DisplayRange: 0-2 VConstant Current Generator:Current Range: 0 to 20 mAResolution : 1 mAOpen Circuit Voltage: 18 VOven Power SupplyInput: 230 V AC ±10%, 50 Hz	02
8.	Setup to study voltage Mains Supply : 230V ±10%, 50Hz regulation and ripple factor Transformer Rating: 9V centre tapped (300mA) for a half-wave and a full-Half wave Rectifier output : +4V DC approximate wave rectifier without and Centre-Trapped Rectifier: +8V DC approximate with different filters. Bridge Rectifier Output : +8V DC approximate Filter : LC Type Load: Resistive 220W, 0.5W	02
9	Setup for study the Mains: 230V ±10%, 50 Hz magnetic field of a circular Fuse: 0.5A coil DC Power Supply: 5 Volt, 2.6 A DC Ammeter: 0-3 A Reversing Key: 2 Pole, 2 Way On-Off Key: 1 Pole, 2 Way Variable resistance: 0-100 Ohm Tangent Galvanometer Type: Stewart and Gee Scale: 40-0-40 cm Magnetometer Pointer: Aluminium Quadrant: 0-900 (Four) Coil Type: Aluminium Diameter: 19 cm Wire: Insulated copper Turns : C to (5, 50,100,200, 500)	02

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