



ਆਈ. ਕੇ. ਗੁਜਰਾਲ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ ਜਲੰਧਰ, ਕਪੂਰਥਲਾ
I. K. GUJRAL PUNJAB TECHNICAL UNIVERSITY JALANDHAR, KAPURTHALA
DEPARTMENT OF PHYSICAL SCIENCES

Ref. No. IKGPTU/PS/1855

For Website
By Registered / Speed-post

Dated 01/03/2019

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Subject: Quotation for Electromagnetism Lab equipment/setup at IKGPTU, Main Campus

Dear Sir/Madam,

University intends to purchase the equipment/setup for the Electromagnetism Lab in Department of Physical 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/setup 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 Electromagnetism Lab in Department of Physical Sciences"** and to **be opened by committee only**. Quotation must reach in the office of **Head of Department, Department of Physical Sciences, CB-III, I.K. Gujral Punjab Technical University, Jalandhar - Kapurthala Highway, VPO-Ibban, Kapurthala-144603**, upto 3 P.M. on March 25, 2019. Quotation will be opened in the office of Head of Department, Department of Physical Sciences at 4.00 P.M. on the same day. The vendors or their representatives may be present at the time of opening of quotations. If Government of Punjab/IKGPTU declares holiday on March 25, 2019, quotations will be opened on the next working day. Specification of the items are as per attached Annexure-1.

Terms and Conditions:

1. 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 Physical 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 Physical Sciences in terms of successful installation and demonstration of supplied equipments from the vendors.

HEAD 

Department of Physical Sciences

Mail id: physicalsciences@ptu.ac.in

"Propelling Punjab to a Prosperous Knowledge Society"

I. K. Gujral Punjab Technical University

Jalandhar-Kapurthala Highway, Kapurthala-144 603 Mob.: +91 94658 84849, 98729 98760

Email : demit.sarin@yahoo.com, amitsarin@ptu.ac.in Website : www.ptu.ac.in

Annexure-1

Following are the specification of the equipment required for the Electromagnetism Lab in the Department of Physical Sciences.

S.No.	Name of Setup	Technical Specifications	Qty
1	Multimeter for measuring (a) Resistances (b) AC and DC Voltages, (c) DC Current, (d) Capacitances, and (e) Checking electrical fuses.	Voltage DC Voltage: 0 - 350V AC RMS Voltage: 0 - 350V Current DC Current: 0 - 2A AC Current: 0 - 2A Resistance: 0 - 2MV On Board Fuse: 200mA, 2A Mains supply: 230V \pm 10%, 50Hz	2
2	Setup to determine a high resistance by leakage method using Ballistic Galvanometer.	Ballistic Galvanometer Suspension Wire: Phosphor Bronze Reflector: Concave Mirror Coil Resistance: 100 ohms Lamp & Scale Lamp: Laser Light Source Scale: 30-0-30cm Ballistic Galvanometer Power Supply: 6V DC Potentiometer: 5k ohms Mains Supply: 90-275V, 50Hz Fuse : 0.5A, Rheostat, Morse Key, Option for Multimeter	2
3	Setup to study the Characteristics of a Series RC Circuit	DC Power Supply: +5V Mains Supply: 230V \pm 10%, 50Hz Resistance: 300 ohms, Capacitance: 10-20 μ F, AC Milliammeter: 0-200 mA	2
4	Setup to study the series and parallel LCR circuit and determine its (a) Resonant Frequency, (b) Quality	Mains Supply: 90 – 275V, 50/60Hz Generator Output: 8Vpp Frequency Ranges: 1KHz, 10KHz, 60KHz Voltmeter: 2V Inductance coil: 1H, Resistor: 300 ohms, Capacitor: 10-20 μ F, AC milliammeter: 0-500mA	3
5	Setup to determine charge to mass ratio (e/m) of an electron by Thomson Method	Cathode Ray Tube Distance between Plates: $d = 1.4\text{cm}$ Length of Plates : $l = 3.23\text{cm}$ Distance between Screen: $L = 14.5\text{cm}$ and Plates (edge) Focusing Voltage: Variable 0 - 300V DC Intensity Adjustment DC Voltage : Variable 0 - 60V Deflection Voltage: Variable 0 - 50V Scale : 0 - 30cm each side CRT connection : Octal socket LCD : 16x2 Characters Deflection Magnetometer: 0 to 90° Mains : 230V AC \pm 10%, 50Hz Fuse: 500mA	2

6	Setup to determine self-inductance of a coil by Maxwell Bridge method.	Maxwell's Bridge setup, A.C. source giving sine wave signal of 1KHZ with display board, two sockets for output of AC signals fitted on wooden/any other case Detector: For detecting small AC signals in output, Null Detector inbuilt, with digital display, 4mm socket for making connections Four unknown values, R_4 and R_3 : Two Decade dial of $\times 10$ and $\times 100$ ohms L_2 Decade dial of $\times 10$ mH R_2 Decade dial of $\times 1$ ohm	2
7	Setup to determine the value of horizontal component of Earth's magnetic field B_h .	Tangent Galvanometer with Bakelite moulded ring 170mm dia, with three set of winding either 2, 50, 500 turns or 2, 5, and 50 turns, Simple Rheostat, Reverse key, Spirit level, Ammeter, Stabilised power supply variable from 0-5 V at 1A, Sand Paper	2
8	Setup to determine unknown capacitance by flashing and quenching method.	Flashing and quenching Ne bulb mounted on panel, High voltage DC power supply 0-250VDC/ 30 mA, 3 Known capacitors 0.1 μ F, 0.2 μ F, 0.3 μ F (Paper type) connected with/behind the front panel, 1 unknown capacitors to be determined, Toggle switches	2

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