SEALED QUOTATION FOR PURCHASE OF PHYSICS LAB INSTRUMENTS

Sealed Quotations are invited by The Principal, Daulat Ram College, University of Delhi, for the purchase of Physics Laboratory Instruments in Physics Department. The list of Instruments / set-up / trainer kits are attached herewith. The experiments are based on CBCS curriculum offered by University of Delhi. For detailed requirements for experiments visit college website www.dr.du.ac.in. The quotations will be received by the office till 26.12.2018, 5:00 PM. The tender should be superscribed with "Quotation for Physics Lab Instruments". Please indicate the lab/institutions where these instruments are being used.

Dated: 11/12/18

Sarita Roy
Principal

S.No.	Experiment Set-up
1.	Measurement of susceptibility of paramagnetic solution (Quinck`s Tube Method)
2.	To measure the Magnetic susceptibility of Solids.
3.	To study the PE Hysteresis loop of a Ferroelectric Crystal.
4.	To draw the BH curve of Fe using Solenoid & determine energy loss from Hysteresis.
5.	To measure the resistivity of a semiconductor (Ge) with temperature (up to 150°C) by four-probe method and to determine its band gap.
6.	To determine the Hall coefficient of a semiconductor sample.
7.	To verify the law of Malus for plane polarized light.
8.	To analyse elliptically polarized Light by using a Babinet's compensator.
9.	To determine the wavelength and velocity of ultrasonic waves in a liquid (Kerosene Oil, Xylene, etc.) by studying the diffraction through ultrasonic grating.
10.	To verify the Stefan`s law of radiation and to determine Stefan's constant.
11.	To determine Boltzmann constant using V-I characteristics of PN junction diode.
12.	To determine the refractive index of liquid by total internal reflection using Wollaston's air-film.

Experiment wise Specifications:

1. Measurement of susceptibility of paramagnetic solution (Quinck`s Tube Method) :
   Quinck's tube with stand.
   Sample : MnSO4. H2O.
   R.D. Bottle.
   Travelling Microscope, Horizontal scale : 180mm with screw gauge type motion.Vertical scale : 150mm with screw gauge type motion.
   Least count : 0.01mm on both scales.
   Electromagnet, Pole Pieces : φ 50mm tapered to φ 20mm. Field : 9.5 KG at 10mm air-gap.
   Constant Current Power Supply, Current : -0-4 A (Smoothly adjustable). Line load Regulation : ± 0.1%.
   Digital Gaussmeter, Range : 0-2 KG & 0-20 KG, Accuracy : ± 0.5%

2. To measure the Magnetic susceptibility of Solids.
   Electromagnet: Max magnetic field 1 Tesla at 10mm pole space
   Constant current power supply: output current 0-3.5 A
   Gauss probe mount, Digital Gauss meter (Range 0-20 kGauss), Gouy's Balance, Specimen holder with mount, Test Sample, Connecting Cables, User Manual
3. To study the PE Hysteresis loop of a Ferroelectric Crystal.
   Ferroelectric crystal, PE set up.
4. To draw the BH curve of Fe using Solenoid & determine energy loss from Hysteresis.
   Solenoid, transformer, current supply, CRO.
5. To measure the resistivity of a semiconductor (Ge) with temperature (up to 150°C) by four-probe method and to determine its band gap.
   Multirange Digital voltmeter: Range : X 1 (0 - 200.0 mV) & X 10 (0 - 2.000 V)

Resolution : 100 μV at X 1 range
Accuracy : ± 0.1% of reading ± 1 digit
Impedance : 10 M ohm
Display : 7 segment, LED (12.5 mm height) with auto polarity and decimal indication.
Overload Indicator : Sign of 1 on the left and blanking of other digits.
Constant Current Generator: Open circuit voltage : 18 V
Current range : 0 - 20 mA
Resolution : 10 μA
Accuracy : ± 0.25% of the reading ±1 digit
Load regulation : 0.03% for 0 to full load
Line regulation : 0.05% for 10% changes
Oven Power Supply

6. To determine the Hall coefficient of a semiconductor sample.

Hall Probe (Ge Crystal): Contacts : Spring type (Solid Silver)
Hall Voltage : 0.1 - 1 Volt/100 mA/KG
Thickness of Ge Crystal : 0.4 - 0.5 m.m.
Resistivity : ≅ 10 Ω cm.
Hall Effect Set-up (Digital):
Digital Millivoltmeter: Range : 0 - 200.0 mV
Resolution : 100 μV
Accuracy : ±0.1% of reading ±1 digit
Impedance : 1 Mohm
Special Features : Auto Zero & polarity indicator
Overload Indicator : Sign of 1 on the left & blanking of other digits.
Constant Current Power Supply: Current range : (0 - 20 mA) or as required for the particular Hall Probe
Resolution : 10 μA
Accuracy : ±0.2% of the reading ±1 digit

Load regulation : 0.03% for 0 to full load
Line regulation : 0.05% for 10% changes.

Electromagnet

Digital Gaussmeter:

Range : 0 - 2 K gauss & 0 - 20 K gauss
Resolution : 1 gauss at 0 - 2 K gauss range
Accuracy : ± 0.5%
Display : 3½ digit, 7 segment LED
Detector : Hall probe with an Imported Hall Element
Power : 220V, 50 Hz
Special : Indicates the direction of the magnetic field.

Note: The specification mentioned above are general specifications. It is to request you please quote all the variants available with you. Please also quote the rates for individual items with in the experimental setup.