

Physics Laboratory

Course No.: PHY-18103(CR) and PHY-18203(CR)
Semester I and II Lab. Experiments for session 2018-2019
LAB-I

S.No	Expt-No.	Aim/Objective	LAB/Room
1	Expt-01:	To measure the ratio of charge/mass (e/m) by Thomson method, for electrons and to learn about phenomena of electric and magnetic deflection and application of vector product.	I
2	Expt-02:	To analyze the effect of varying frequency to the output voltage of a low pass and high pass Active filters and to plot the output voltage frequency response of RC low pass filter and high pass filter.	I
3	Expt-03:	To study the variation in current flowing in circuit containing a LDR due to variation in intensity of light source and the distance from LDR also to Study LDR as an dark sensor.	I
4	Expt-04 :	To calculate and draw the DC output voltages of half-wave and full-wave rectifiers without smoothing capacitor and with smoothing capacitor. Compare the results of two diode rectifier with bridge rectifier	I
5	Expt-05:	To measure the relative permittivity (ϵ_r) of BaTiO ₃ at a series of temperatures and using these data obtain the Curie temperature T _c of barium Titanate.	I
6	Expt-06:	To determine Speed of Sound in air Using Lissajous Figures and show that the speed increases when the temperature is increased.	I
7	Expt-07:	To determine the plateau and optimal operating voltage of a Geiger-Müller counter. To determine the resolving time(dead time) of a GM counter and verify the Inverse square relationship between the distance and intensity of radiation:	I
8	Expt-08:	To study the Transistorized Astable Multivibrator biased for linear operation and operated as Common Emitter Amplifiers with 100% positive feedback.	I
9	Expt-09:	To Determine the wave length of a laser light using diffraction grating and narrow slit(or thin wire) and determining the grating radial spacing of the CD.	I
10	Expt-10:	To measure the ratio of charge/mass (e/m) by Helical method, for electrons and to learn about phenomena of electric and magnetic deflection and application of vector product.	I

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LAB-II

S.No	Expt- No.	Aim/Objective	Lab /Room
1	Expt-13:	To study Adder, Subtractor ,inverting and non inverting amplifier using OP-AMP IC741 and verify their theoretical and practical output. Construct an astable multivibrator using OP-AMP IC741.	II
2	Expt-14:	The aim of this experiment is to determine that V_H , the Hall Voltage, is proportional to BI , the applied magnetic field times the applied current. Also for a Ge crystal, we measure R_H , along with the carrier concentration, mobility, and the electrical conductivity.	II
3	Expt-15:	To determine the plank's constant using LEDs of different colors.	II
4	Expt-16 :	To determine the characteristics of an UJT and to construct and study a relaxation oscillator.	II
5	Expt-17:	(ESR)To measure the Landé g factor for the free electron in DPPH as predicted by quantum mechanics.	II
6	Expt-18:	Determination of the operating voltage for the photomultiplier (PM) tube, Observe γ -ray energy spectra, identify the processes taking place. Calibration of a spectrometer for a particular gamma-ray energy, determine the identity of an unknown isotope and to compute the energy resolution of the NaI detector.	II
7	Expt-19:	To measure the ratio of charge/mass (e/m), by determining the B-field and the radius of curvature of the electron beam in the magnetic field.	II
8	Expt-20:	To calculate the band gap energy (E_g) in Germanium (Ge) semiconductor by four point probe resistivity measurement method.	II
9	Expt-21:	To determine the velocity of ultrasonic waves in liquids and measure their adiabatic compressibility.	II
10	Expt-22:	Measurement of Magnetic Susceptibility of Paramagnetic sample(liquid/solution) by QUINCKE'S TUBE METHOD.	II

