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DEPARTMENT OF PHYSICS

Annexure - II

1. **Subject Code**: PPH 151/251 **Course Title**: Physics Lab
2. **Contact Hours**: L: 0 T: 0 P: 2
. **Semester**: I / II
3. **Credits:** 1
4. **Pre-requisite**: Basic Knowledge of Experiments in Physics
5. **Course outcomes:** After the completion of the course students will be able to

   1. Find the electrical and magnetic properties of materials and extend the knowledge of nanotechnology using electroplating.

   2. Understand the principle and characteristics of photo devices and optical fiber.

   3. Apply the methods of calibration to analog instruments.

   4. Determine the wavelength of light and specific rotation of optically active substance through the experiments based on phenomena of optics.

Students have to perform any twelve experiments:

1. To determine the wavelength of monochromatic light by Newton's ring experiment.
2. To determine refractive index of transparent liquid by Newton's ring experiment.
3. To determine the specific resistance of the constantan wire using Carey- Foster's bridge.
4. To determine the wavelength of monochromatic light using Fresnel Biprism experiment
5. To determine the energy band gap of given semiconductor by Four-probe method.
6. (a) To determine the wavelengths of spectral line of Mercury light using plane transmission grating.

   (b) To determine the wavelengths of given Laser light using plane transmission grating.
7. To study the variation of magnetic field with distance along the axis of circular coil carrying current and to determine the radius of coil.

8. To determine the magnetic susceptibility of a paramagnetic substance by Quincke's method.
9. To determine the specific rotation of Sugar Solution using Half Shade Polarimeter.
10. To study the characteristics of Solar Cell
11. a) To calibrate Voltmeter by using potentiometer.
    b) To calibrate Ammeter by using potentiometer.
12. To determine Planck's constant by photoelectric method and study the variation of intensity with distance.
13. To determine the electro chemical equivalent of Copper.
14. To Verify Law of Malus.
15. To study Hall Effect and determine the hall voltage, hall coefficient, current density and carrier mobility of a given semiconductor.
16. To determine the numerical aperture and acceptance angle of an optical fiber.