

**PH101 Physics-I (3-1-0) Credits:4**

**Theory: 100**

**Sessional:50**

**Time: 3 hours**

**Group-A : General Physics**

Angular momentum, Relation between torque and angular momentum

Simple harmonic motion, few examples, superposition

Relation between elastic constants, Energy of strained body, torsional balance, Bending of beam, Cantilever

Poisson's formula, Stoke's law, Bernoulli's Equation

**GroupB : Heat**

1<sup>st</sup> and 2<sup>nd</sup> law of thermodynamics, Isothermal and adiabatic changes, Carnot engine, Otto cycle, Carnot theorem, reversible and irreversible process, entropy, entropy of perfect gas and steam, thermodynamic temperature scale, Black body radiation, Stefan's law, Pyrometer.

**Optics**

Aberation in lenses, spherical aberration, remedy, chromatic aberration, achromatism, Interference (Fresnel Biprism)

**Group C: Electricity and Magnetism**

Gauss's theorem and its applications, Poisson's and Laplace's equation, Lorentz force, Biot savart law & ampere's law, their application, L-C-R circuit.

Dia, para and ferromagnetism, hysteresis.

Laser (Basic principle and uses)

**PHY 101L Physics Practicals-I (0-0-4) 2 Credits**  
**Total Marks 50 (40+10)**

1. DETERMINE THE YOUNG'S MODULUS OF THE WIRE BY USING SEARLE' APPARATUS.
2. DETERMINE THE RESISTANCE OF THE GIVEN GAL VANOMETER BY USING A POST OFFICE BOX.
3. DETERMINE THE RIGIDITY MODULUS OF THE MATERIAL OF THE GIVEN ROD BY STATICAL METHOD.
4. DETERMINE THE RATIO OF E.M.F. OF TWO CELLS BY USING A POTENTIOMETER.
5. DETERMINE THE TEMPERATURE CO-EFFICIENT OF THE MATERIAL OF THE GIVEN RESISTANCE BY USING A METRE BRIDGE.
6. FIND THE CO-EFFICIENT OF VISCOSITY OF WATER BY CAPILLARY FLOW METHOD.
7. DETERMINE THE POWERS OF THE GIVEN LENSES (ONE CONCAVE & ONE CONVEX) BY USING AN OPTICAL BENCH.
8. FIND THE MOMENT OF INERTIA OF THE GIVEN SOLID ABOUT ITS OWN AXIS BY USING THE M.I. TABLE.
9. DETERMINE THE HORIZONTAL COMPONENT OF EARTH'S MAGNETIC FIELD BY USING MAGNETOMETER.