BSc B.Ed. Sem II Examination, 2020
Subject: Physics
Course: GE 1.2/ GE 2.2

Full Marks: 50   **Time: 2 Hours**

Answer any ten (10) questions from the following: **5 X10 =50**

1) Find out the expression for depression of cantilever when the load is fixed at the center. State the expression if the bar is cylindrical.

2) Obtain the relation between Young's modulus, Rigidity modulus and Bulk Modulus.

3) Derive the expression for the gravitational potential and gravitational field due to a uniform sphere at a point outside the sphere.

4) In case of compound pendulum, show that centres of suspension and oscillation are reversible (or interchangeable).

5) Derive the differential equation of angular SHM in case of compound pendulum.

6) What is the meant by viscosity? State the factors on which the force of viscosity depends.

7) Define the neutral surface, neutral axis, and plane of bending of a beam rigidity fixed horizontally at one end loaded at the other.

8) Poisson's ratio of a material is 0.379 and its rigidity modulus is 2.87×10^{11} dynes/cm^2. Calculate the Young's modulus of the material.

9) In an experiment with Poiseuille's apparatus the following observations were obtained: Volume of water flowing per minute = 6 cc, Pressure difference across the ends of a capillary tube = 30 cm of water. Length of the tube = 50 cm, Radius of the capillary tube = 0.05 cm, Find the coefficient of viscosity of water.

10) Explain pressure energy and potential energy of liquid in motion.

11) Find out the moment of inertia of a solid cylinder about its axis.

12) Explain Parallel axis theorem and Perpendicular axis theorem with examples.