B.Sc. DEGREE EXAMINATION, EVEN SEMESTER 2021
II Year IV Semester
ELECTRICITY AND MAGNETISM

Max.marks :25

Answer any **FIVE** questions $(5 \times 5 = 25)$ Marks

1. Apply Gauss's law to calculate the electric field intensity due to a uniformly charged sphere at points:
   (i) outside the sphere, and (ii) inside the sphere.

2. Explain the theory of potentiometer. How will you use it to calibrate an ammeter?

3. (i) Describe the method of measuring a high resistance by the leakage method.
   (ii) If the charge on a capacitor of capacitance 2μF in leaking through a high resistance of 100 mega ohms is reduced to half its maximum value, calculate the time of leakage.

4. (i) Discuss determination of the Peltier coefficient at a junction. (ii) Write a note on thermoelectric refrigerator.

5. Obtain relation between the three magnetic vectors B, H and M.

6. Discuss the electron theory of magnetism.

7. Explain measurement of thermo EMF using potentiometer.