

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.

B.Sc. Physics - END SEMESTER EXAMINATIONS APRIL - 2024

SEMESTER -IV

20UPHCT4008 - Electricity and Magnetism

Total Duration : 2 Hrs. 30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. What is electric field intensity. Obtain the electric intensity due to a point charge.
2. Explain the determination of resistance of a wire using Carey Foster's bridge.
3. Discuss the growth of current in a circuit containing resistance and inductance.
4. Describe Thermoelectric refrigerator.
5. Sketch the various types of magnetic materials.
6. Describe the decay of charge in a circuit containing capacitance and resistance.
7. Explain the measurement of high resistance by leakage.
8. What is hysteresis? Give the various energy losses arising due to hysteresis.

Section C

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. Apply Gauss's law to obtain the electric field due to a uniformly charged conducting sphere.
10. Give the principle of a potentiometer and hence explain the determination of internal resistance of the cell using a potentiometer.
11. Explain the determination of high resistance by leakage.
12. Discuss the measurement of thermo-emf using a potentiometer.
13. Describe the Weiss's theory of ferromagnetism.
