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 - NOV'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. State Gauss law and give its proof.
2. Discuss about the determination of resistance of the given wire with necessary theory using Carey Foster's bridge.
3. Obtain an expression for the decay of current in an LR circuit.
4. Discuss about the determination of the Peltier coefficient at a junction.
5. Write notes on Langevin's theory of dia and paramagnetism.
6. Explain about the mechanical stress on unit area of a charged conductor.
7. Discuss about the working circuit to compare the emf of two cells using potentiometer.
8. Explain the experimental method for the measurement of high resistance by leakage.

Section C

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

9. Derive an expression for electric field due to a uniformly charged sphere conducting and non-conducting.
10. Discuss the experimental setup to determine the internal resistance of the cell using potentiometer.
11. Discuss in detail growth of current in LCR circuit.
12. Explain the method to measure the thermos emf using a potentiometer.
13. Discuss about an experiment to draw M-H curve in horizontal model and explain its energy loss due to hysteresis.

*****