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

22UPHCT4008 - Electricity And Magnetism

Total Duration : 2 Hrs. 30 Mins. Total Marks : 60

Section B

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

1. Explain about the electric field intensity due to apoint charge.
2. Illustrate on the comparison of emf of two cells using a potentiometer.
3. Predict on the equation for the growth of current in a circuit containing a resistance and a capacitance.
4. Describe the various laws related to the thermoelectric emf.
5. Find the magnetic field at the centre of a circular coil carrying current.
6. Compute the electric field due to a uniformly charged non – conducting cylinder.
7. With a neat diagram, explain about the calibration of a high range voltmeter using potentiometer.
8. Examine on the measurement of high resistance by leakage method.

Section C

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

9. Apply gauss law to calculate the field at various points due to a uniformly charged sphere.
10. State the principle of potentiometer and examine how it can be used to calibrate an ammeter.
11. Examine on the growth of charge in a circuit containing inductance, capacitance and a resistance.
12. Explain about production of Pyroelectricity.
13. State Biot-Savart's Law and evaluate its application to magnetic field at a point due to a straight conductor carrying current.

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