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-2023
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 and derive the differential form of Gauss law.

2. What are the applications of electrified soap bubble?

3. Using Kelvin's double bridge method how will you measure low resistance.

4. With necessary diagram explain the calibration of ammeter using potentiometer.

5. Explain the procedure of measurement of high resistance by leakage method.

6. Differentiate Peltier's and Joule's effect.

7. Elucidate Curie- Weiss law of ferromagnetism.

8. Illustrate the experimental procedure to draw the M-H curve.

Section C

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

9. Calculate the electric field due to an uniformly charged sphere using Gauss law .

10. How do you determine the unknown resistance using Carey Forster's Bridge? Explain it with neat diagram.

11. Explain the variation of charge with time in LCR circuit during charging.

12. Describe the procedure to measure the thermoemf using a potentiometer.

13. Narrate the Langevins' theory of diamagnetism and para magnetism.

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