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. END SEMESTER EXAMINATIONS NOVEMBER-2022
SEMESTER - V
20UPHCT5009 - Electromagnetism

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

Section A

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

1. Compare Series and Parallel resonant circuit, list at least five points.
2. Deduce an expression for peak, average and RMS values of AC voltage and current.
3. Derive the Faraday's law of electromagnetic induction in the form Curl E = -∂B/∂t.
4. Calculate the self inductance of a solenoid having 1000 turns and length 1m. The area of Cross- Section is 7 cm^2 and the relative permeability of the core is 1000.
5. With Neat Sketch Explain the working of single phase induction Motor.
6. Explain the construction and Working of three phase AC generator.
7. Write the Maxwell's equations and bring out the significance of each of them.
8. Deduce the Maxwell's equation for free space and Prove that electromagnetic waves are transverse.

Section B

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

9. With necessary theory, deduce the expression for impedance of AC circuit containing L,C and R in series.
10. Describe the method of determining the Self inductance of a solenoid with neat circuit diagram.
11. Explain Induction in Series and Induction in Parallel Mode.
12. Compare the different Wound dynamos with neat sketch.
13. Define Poynting vector shortly and also Explain Hertz experiment for production and determination of electromagnetic waves.

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