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School of Basic Sciences
Bachelor of Science Honours in Physics
Mid Term Examination - May 2024

Duration : 90 Minutes
Max Marks : 50

Sem IV - C1UD403T - Electromagnetic Theory

General Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) List the types of magnetic materials & explain it. K2 (2)
- 2) Define Electric field for charge distribution. K1 (3)
- 3) Explain Faraday's law of induction using neat diagram. K2 (4)
- 4) What is the electromagnetic field produced by moving loop in time varying field? What is time harmonic field? K2 (6)
- 5) Illustrate auxiliary magnetic field in Maxwell's equation? Give physical significance of it. How it is connected with true magnetic field? K3 (6)
- 6) Illustrate the relation between three magnetic vectors. K3 (9)
- 7) Prove that divergence of a curl of a vector is zero, using Stoke's theorem with proper explanation. K4 (8)
- 8) Analyze the potential difference and absolute potential. Give the relation between potential and field intensity. K4 (12)

OR

Derive an expression for energy stored and energy density in electrostatic field. K4 (12)