

Roll No.

Total Pages : 02

BT-4/M-24

44160

ELECTROMAGNETIC FIELD THEORY

Paper : EC-214-A

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* from each Unit.

Unit I

1. (a) Write short notes on Gradient, Divergence and curl of a vector along with their physical significance.
(b) Write short notes on Gauss Divergence theorem and Stokes theorem. 15
2. State and explain the Gauss's law. Explain the applications of Gauss's law with example. 15

Unit II

3. Write short notes on the following : 15
 - (a) Biot-Savart's Law
 - (b) Amperes's Law
 - (c) Faraday's Law
 - (d) Lenz's Law.

4. Explain boundary conditions for magnetic field. 15

Unit III

5. Explain reflection and refraction of uniform plane wave. 15
6. Derive the wave equations from the Maxwell's equations for conducting space. 15

Unit IV

7. Explain the model of Transmission Line. Also explain transmission line equations. 15
8. What do you understand by TE, TM and TEM mode ? Also write short notes on the following : 15
Cut-off and Guided Wavelength in Waveguide.