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Code No. 6776 / CBCS / NON CBCS /N

FACULTY OF SCIENCE

M.Sc. II-Semester Examination, May / June 2017

Subject: Physics & Applied Electronics
Paper- I
Electromagnetic Theory

Time : 3 Hours **Max. Marks: 80**

PART – A (4x8=32 Marks)
(Short Answer Type)

1. Obtain Poisson's equation for electrostatic potential
2. Discuss scalar and vector potentials
3. Write Maxwell equations for homogeneous isotropic dielectric medium
4. Discuss attenuation and skin effect.
5. Write Fresnels relations
6. Write the applications of metallic reflection
7. Discuss oscillating electric dipole radiation
8. What is the importance of retarted resistance

PART – B (4x12=48 Marks)
(Essay Answer Type)

9.(a) Obtain the solution to Laplace equation in Cartesian coordinates.

OR

(b) Show the conservation of energy by using Poynting theorem.

10.(a) Describe how the energy is transmitted by a plane electromagnetic wave.

OR

(b) Discuss linear, circular and elliptical polarization of electromagnetic wave.

11.(a) Obtain the expressions for reflection and refraction at the plane boundary of dielectric medium.

OR

(b) What is dispersion. Explain normal and anomalous dispersion in non-conductors.

12.(a) Obtain solutions to inhomogeneous equation for retarted potentials.

OR

(b) Obtain the expression for Lienard-Wiechert potentials.

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