

321.21

Exam. Code: 0927  
Sub. Code: 6897

1128  
B.E. (Electronics and Communication Engineering)  
Third Semester  
EC-301: Electromagnetic Theory

Time allowed: 3 Hours

Max. Marks: 50

*NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.*

x-x-x

I. Define the following:-

- a) Attenuation Factor of waveguide
- b) Ampere's Law
- c) Skin Effect
- d) Voltage Equations of a transmission line
- e) Stoke's Theorem

(5x2)

UNIT - I

- II. State Gauss's Law and derive an expression for Poisson's Equation using Gauss's Law. Also derive Laplace's Equation from Poisson's Equation. (10)
- III. State and explain Maxwell's equations in integral form. Also explain their boundary conditions. (10)
- IV. State and prove Poynting Theorem. Also describe their applications to energy radiation. (10)

UNIT - II

- V. a) What do you mean by SWR? Explain.  
b) Describe the relation between infinite and finite transmission lines. (4,6)
- VI. a) What do you mean by TM waves? State their characteristics.  
b) State the differences between TEM and TE waves. (7,3)
- VII. What do you mean by TE Mode? Derive an expression for its guide wavelength while propagating in circular and rectangular waveguides. (10)

x-x-x