





12. a) Derive an expression for energy stored in the electrostatic field of a section of a coaxial cable. (13)

(OR)

b) Derive the electric field boundary condition, when a wave travels between two different dielectrics medium. (13)

13. a) State Biot-Savart's law and derive the expressions for magnetic field intensity, of a straight current carrying conductor.

(OR)

b) Derive the magnetic field intensity of a circular current carrying conductor.

14. a) Derive the inductance of toroid and solenoid.

(OR)

b) i) Derive the equation which relates magnetization and permeability. (8)

ii) Explain the different types of magnetic materials. (5)

15. a) Derive the Poynting theorem equation from Maxwell's curl equation.

(OR)

b) Derive the Maxwell's equations in Differential form and integral form.

PART - C

(1×15=15 Marks)

16. a) Apply Lorentz force equation, to derive the force on a differential current element.

(OR)

b) Illustrate with an example, to apply Poisson's and Laplace equation.