

EE3301 ELECTROMAGNETIC FIELDS

IMPORTANT QUESTIONS

UNIT - I ELECTROSTATICS -1

2 - Mark

1. Define coordinate Systems.
2. What is vector fields?
3. Write about Gradient Divergence.
4. Define Field due to discrete and continuous charges.

13 - Mark

1. Explain Sources and effects of electromagnetic fields.
2. State Curl - theorems and applications.
3. State Coulomb's Law.
4. Explain Gauss's law and applications.
5. Describe Electric field intensity.

UNIT - II ELECTROSTATICS - II

2 - Mark

1. What is Electric potential.
2. Define Uniform and Non-Uniform field.
3. Write about Utilization actor.
4. What are conductors.
5. What are dielectrics?
6. Distinguish between Dielectric polarization & Dielectric strength.
7. Define Capacitance.
8. What is Energy density.

13 - Mark

1. Describe Electric potential.
2. Explain Electric field and equipotential plots.

3. Write about Electric field in free space with detailed reference.
4. Define Electric field in multiple dielectrics.
5. Explain Boundary conditions with neat sketch.
6. State Poisson's and Laplace's equations.

UNIT - III MAGNETOSTATICS

2 - Mark

1. What is Lorentz force?
2. Define magnetic field intensity (H).
3. Write about straight conductors.
4. What is circular loop?
5. Demonstrate Magnetic flux density (B).
6. Identify B in free space.
7. What is Magnetization?
8. Write about Boundary conditions.
9. Define magnetic force

13 - Mark

1. Explain infinite sheet of current.
2. Describe magnetic materials.
3. Write about Magnetic field in multiple media.
4. Describe scalar and vector potential.
5. State Poisson's Equation.
6. Write about energy density.

UNIT - IV ELECTRODYNAMIC FIELDS

2 - Mark

1. Define Magnetic Circuits.
2. Displacement current.
3. State the Relation between field theory and circuit theory

13 - Mark

1. State Faraday's law –
2. Describe Transformer and motional EMF
3. State Maxwell's equations (differential and integral form)

UNIT - V ELECTROMAGNETIC WAVES

2 - Mark

1. Define velocity.
2. Demonstrate intrinsic impedance.
3. Write about propagation constant.
4. What are conductors?
5. Define skin depth.
6. What is Poynting vector?

13 - Mark

1. Describe Electromagnetic wave generation and equations.
2. Explain Wave parameters.
3. State Waves in free space.
4. Explain lossy and lossless dielectrics.
5. Write about Plane wave reflection and refraction with detailed reference.