

UNIT -1- ELECTROSTATICS**2 Mark Questions:**

1. Write a short note on superposition principle.
2. Define Electric field.
3. What is meant by 'Electric Field lines'?
4. Why electric field lines never intersect?
5. Define electric dipole and electric dipole moment.
6. What is an equipotential surface? Write any three properties.
7. Give the relation between electric field and electric potential.
8. What is meant by electrostatic energy density?
9. What is polarization?
10. What is dielectric strength?
11. What is meant by 'Corona Discharge'?
12. Define capacitance of a conductor.

3 Mark Questions:

1. What are the differences between Coulomb's Force and Gravitational Force?
2. What are the properties of an equipotential surface?
3. Write short notes on electrostatic shielding.
4. Discuss the basic properties of electric charges.
5. Derive an expression for the torque experienced by a dipole due to a uniform electric field.
6. Derive an expression for electrostatic potential due to a point charge.
7. Obtain an expression for potential energy due to a system of charges.
8. Derive an expression for electrostatic potential energy of the dipole in a uniform electric field.
9. Obtain Gauss law from Coulomb's law.
10. Obtain the expression for electric field due to a uniformly charged spherical shell.

5 Mark Questions:

1. State Coulomb's law and discuss its various aspects.
2. Define Electric Field and discuss its various aspects.
3. Derive an expression for the Electric field due to a dipole on its axial line.
4. Derive an expression for the Electric field due to a dipole on its equatorial plane.
5. Derive an expression for electrostatic potential at a point due to an electric dipole.
6. By using Gauss law, obtain the expression for electric field due to an infinitely long charged wire.
7. By using Gauss law, obtain the expression for electric field due to an infinite plane sheet of charge.
8. Obtain the expression for capacitance for a parallel plate capacitor.
9. Obtain an expression for energy stored in the parallel plate capacitor.
10. Explain the effect of a dielectric placed in a parallel plate capacitor.
11. Derive an expression for resultant capacitance, when capacitors are connected in series and in parallel.
12. Explain the construction and working of a Van de Graaff generator.

