

Physics - ICS Part 2 Physics Chapter 12 Short Questions Preparation

Q1. Write two properties of electric field.

Ans 1: 1. Electric field lines originate from positive charges and end on negative charges.
2. The tangent to a field line at any point gives the direction of the electric field intensity at that point.

Q2. Center of planetary system is oppositely charged to the rest of planets. How orbits of planets would be modified?

Ans 1: It would add or subtract the gravitational force if the charge was large enough and the sun was charged. So the radius of the orbits would be changed.

Q3. What is the effect of medium between the charges upon Coulomb's force?

Ans 1: If an insulating material i.e. dielectric is placed between the charges, it will reduce the electrostatic force as compared to free space by a factor called relative permittivity.

Q4. State Coulomb's law.

Ans 1: It states that the force of attraction or repulsion between two point charges is directly proportional to the product of the magnitudes of charge and inversely proportional to the square of the distance between them.

Q5. How can you identify that when plate of capacitor is positively charged?

Ans 1: For the identification of positively charged plate of a capacitor, a gold leaf electroscope is used. For this purpose, the plate of capacitor is brought near the positively charged disc of electroscope. If the divergence of the gold leaves increases, then the capacitor will be positively charged and vice versa.

Q6. Electric lines of force never cross. Why?

Ans 1: Electric lines of force never cross each other. This is because that electric field lines have only one direction at any given point. If the lines cross, electric field lines could have more than one direction, which is not possible.

Q7. Define electric potential and give its SI units.

Ans 1: The electric potential at any point in an electric field is equal to the work done in bringing a unit positive charge from infinity to that point, keeping it in equilibrium. Its SI unit is Volt (V).

Q8. Define electrostatics and electric force,

Ans 1: Electrostatics: The branch of physics which deals with the study of stationary charges is called electrostatics. Electric force: The force which holds the negative and positive charges that make up atoms or molecule is called electric force.

Q9. Give the statement of Gauss's law.

Ans 1: It states that the total electric flux through any closed surface is equal to $1/\epsilon_0$ times the total charge enclosed in it.

Q10. If a point charge q of mass m is released in a non-uniform electric field with field lines pointing in the same direction, will it make rectilinear motion?

Ans 1: If a point charge q of mass m is placed at any point in the field, it will follow a straight or rectilinear path along the field line due to the repulsive force.
