

Practice sheet

Class XII

Sub: Physics

Chapter-1

1. If a body gives out 10^9 electrons every second, how much time is required to get a total charge of 1C from it?
2. How much positive and negative charge is there in a cup of water?
3. Two insulated charged copper sphere A and B have their centers separated by 50cm, charge on each is $6.5 \times 10^{-7} \text{C}$? A third sphere of the same size but uncharged is brought in contact with the first, then brought in contact with the second, and finally removed from both. What is the new force of repulsion between A and B?
4. Consider three charges q_1 , q_2 and q_3 each equal to q at the vertices of an equilateral triangle of side l . What is the force on charge Q placed at the centroid of the triangle?
5. Consider the charges q , q and $-q$ placed at the vertices of an equilateral triangle find the force on each charge
6. Obtain the formula for the electric field due to long thin wire of uniform linear charge density λ without using gauss's Law.
7. Two charges $+10\mu\text{c}$ and $-10\mu\text{c}$ are placed 5mm apart. Determine the electric field at (a) a point p on the axis of the dipole 15cm away from its centre O on the side of the positive charge, (b) a point Q , 15cm away from O on a line passing through O and normal to the axis of the dipole.
8. A charge of $17.7 \times 10^{-4} \text{C}$ is distributed uniformly over large sheet of area 200m^2 . Calculate the electric field intensity at a distance of 20cm from it in air.