Worksheet: Electric Charges and Fields

ISC · Class 12 · Physics · 8 questions · 26 marks

Name: _____	Date: _____	Score: _____ / 26

Q1. Two point charges of 4 x 10^-7 C and 6 x 10^-7 C are placed 20 cm apart in air. Find the force between them. *[2 marks]*

Q2. How many electrons must be removed from a body to give it a charge of +1.6 x 10^-7 C? *[2 marks]*

Q3. Find the electric field 30 cm from a point charge of 5 x 10^-6 C, and the force on a -2 x 10^-9 C charge placed there. *[3 marks]*

Q4. A uniform field of 2 x 10^3 N/C passes through a square of side 20 cm whose normal makes 30 degrees with the field. Find the flux. *[3 marks]*

Q5. A dipole of moment 6 x 10^-9 C m is placed at 45 degrees to a uniform field of 4 x 10^4 N/C. Find the torque on it. *[3 marks]*

Q6. A charge of 8.85 x 10^-6 C is placed at the centre of a cube of side 15 cm. Find the flux through one face. *[4 marks]*

Q7. An infinite line charge produces a field of 4.5 x 10^4 N/C at 4 cm from it. Find the linear charge density. *[4 marks]*

Q8. Three charges of +2 microcoulomb each sit at the vertices of an equilateral triangle of side 10 cm. Find the net force on any one of them. *[5 marks]*