Worksheet: Electrostatic Potential and Capacitance

Gujarat State Board · Class 12 · Physics · 8 questions · 26 marks

Name: _____	Date: _____	Score: _____ / 26

Q1. Calculate the potential at a point 20 cm from a charge of 4 x 10^-7 C. *[2 marks]*

Q2. Two capacitors of 4 pF and 12 pF are connected in series. Find the equivalent capacitance. *[2 marks]*

Q3. Four charges of 2 microcoulomb each are placed at the corners of a square of side 20 cm. Find the potential at the centre. *[3 marks]*

Q4. Two charges of 3 microcoulomb and -5 microcoulomb are 40 cm apart. Find the potential energy of the system. *[3 marks]*

Q5. A 20 pF capacitor is charged to 100 V. Find the charge stored and the energy stored. *[3 marks]*

Q6. A parallel plate capacitor of capacitance 10 pF is charged by a 200 V battery, which is then disconnected. A dielectric of constant 5 is inserted. Find the new voltage and the new energy. *[4 marks]*

Q7. Three charges of 1 microcoulomb each sit at the vertices of an equilateral triangle of side 10 cm. Find the potential energy of the system. *[4 marks]*

Q8. A 400 pF capacitor charged to 100 V is disconnected and joined to an uncharged 400 pF capacitor. Find the final voltage and the energy lost. *[5 marks]*