

## Worksheet: Electric Charges and Fields

Uttar Pradesh State Board · Class 12 · Physics · 5 questions · 13 marks

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 13

**Q1.** Find the flux through a cube of side 0.1 m with 10  $\mu\text{C}$  at its centre. *[2 marks]*

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**Q2.** Charges 2  $\mu\text{C}$  and -2  $\mu\text{C}$  are 1 cm apart. Find the field at 50 cm on the perpendicular bisector. *[3 marks]*

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**Q3.** An infinite line charge has linear density 5  $\mu\text{C}/\text{m}$ . Find the field at 10 cm. *[2 marks]*

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**Q4.** A conducting sphere of radius 0.1 m carries 5  $\mu\text{C}$ . Find E at  $r = 0.05$  m and  $r = 0.3$  m. *[3 marks]*

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**Q5.** A dipole ( $p = 1 \times 10^{-7}$  C m) is at 30 degrees to a field of  $2 \times 10^4$  N/C. Find torque and potential energy. *[3 marks]*

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