

## Worksheet: Electrostatic Potential and Capacitance

Gujarat State Board · Class 12 · Physics · 5 questions · 14 marks

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

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

Score: \_\_\_\_\_ / 14

**Q1.** Charges  $2\ \mu\text{C}$  and  $-2\ \mu\text{C}$  are  $0.1\ \text{m}$  apart. Find the potential at the midpoint. *[2 marks]*

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**Q2.** A parallel plate capacitor has area  $0.1\ \text{m}^2$  and separation  $1\ \text{mm}$ . Find its capacitance. *[2 marks]*

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**Q3.** Find the equivalent capacitance of  $4, 6, 12\ \mu\text{F}$  in parallel and the charge stored at  $10\ \text{V}$ . *[3 marks]*

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**Q4.** A dielectric  $K = 3$  is inserted in a  $5\ \mu\text{F}$  capacitor charged to  $20\ \text{V}$  with the battery disconnected. Find new  $C$ ,  $V$ , and energy. *[3 marks]*

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**Q5.** A  $10\ \mu\text{F}$  capacitor charged to  $100\ \text{V}$  is connected to an uncharged  $10\ \mu\text{F}$  capacitor. Find the energy loss. *[4 marks]*

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