

小テスト07解答

$$Q1 \quad U_e = \frac{1}{2} CV^2 = 4.0 \times 10^{-3} \text{ J}$$

$$Q2 \quad (1) \quad \sigma = \frac{Q}{A}$$

$$(2) \quad E = \frac{\sigma}{\epsilon_0} = \frac{Q}{\epsilon_0 A}$$

$$(3) \quad V = Ed = \frac{Qd}{\epsilon_0 A} \rightarrow U_e = \frac{1}{2} QV = \frac{Q^2 d}{2\epsilon_0 A}$$

$$(4) \quad u_e = \frac{1}{2} \epsilon_0 E^2 = \frac{Q^2}{2\epsilon_0 A^2}$$

別解:(3)の解をコンデンサーの体積 Ad で割る.