

Answers test 2 2006

$$1. a) i = \frac{V}{R+R_1+R_2}; \quad Q = (V-iR) \frac{C_1 C_2}{C_1+C_2}$$

$$b) i = \frac{V}{R+R_1+R_2}; \quad Q_1 = C_1 i R_1; \quad Q_2 = C_2 i R_2$$

$$2. a) E = \frac{z_0}{\epsilon_0}$$

$$b) c = \frac{A \epsilon_0}{d}$$

$$c) V(L) - V(0) = -\frac{z_0}{\epsilon_0} (L - T)$$

$$3. a) j = \frac{i}{4\pi r^2}$$

$$b) V(B) - V(A) = \frac{q i}{4\pi} \left(\frac{1}{B} - \frac{1}{A} \right)$$

$$c) 0$$

$$4. a) i = \frac{VA}{gL}; \quad b) j = \frac{V}{Lg}$$

$$c) j = \frac{i}{A} = \frac{V}{Lg}$$

$$d) Q = \epsilon_0 \frac{V}{L} A$$