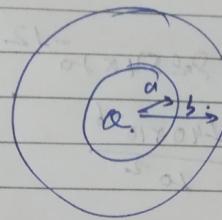


Q20
=

Here,

 $\Rightarrow Q \rightarrow$ charge contained.

$$C = \frac{Q}{4\pi\epsilon_0 r^2}$$

$$r = \sqrt{\frac{Q}{4\pi\epsilon_0 C}} \times \left(\frac{1}{a} - \frac{1}{b}\right)$$

$$C = \frac{Q}{V} = \frac{4\pi\epsilon_0 r}{\left(\frac{1}{a} - \frac{1}{b}\right)}$$

$$I = \oint J \cdot dA$$

$$= 6 \oint E \cdot dA \quad \left\{ \because J = 6E \right\}$$

$$= \frac{6}{4\pi\epsilon_0} \oint D \cdot dA \quad \left\{ D \rightarrow \text{Charge density} \right\}$$

$$I = \frac{V}{R} = \frac{\frac{C}{4\pi\epsilon_0} \times Q}{6}$$

$$RL = \frac{4\pi\epsilon_0}{6}$$

So,

$$10^3 \times C = \frac{80 \times 8.854 \times 10^{-12}}{\frac{140 \times 10^{-6}}{10^{-2}}}$$

$$C = 5.059 \times 10^{-12} F$$

$$C = 50.59 \text{ pF}$$

$$\left(\frac{1}{c} - \frac{1}{d}\right) \times \frac{d}{d-d} = 7$$

$$\frac{1}{m} \left(\frac{1}{2} + \frac{1}{2} \right) = 3$$

$$A_b D_f$$

$$A_b E_f$$

$$\text{points around } A_b \quad A_b \cdot 5 \cdot 10^{-12}$$

$$A_b D_f \quad A_b E_f$$