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Section-04

a) $E = 0 N/C$ (Ans)

b)

$$q_{.} = \sigma_A \times 4\pi r_A^2$$

$$= 10 \times 10^{-6} \times 4 \times \pi \times (9)^2$$

$$= 0.011309 \text{ C}$$

(Ans)

c) $q_{enc, A} = 0.011309 \text{ C}$

Here,

$$q_{enc, B} = \sigma_B \times 4\pi r_B^2$$

$$= -14 \times 10^{-6} \times 4\pi \times (14)^2$$

$$= -0.0345$$

$$q_{enc} = 0.0417 - 0.0345$$

$$= -0.023 \text{ C}$$

$$E = \frac{8.987 \times 10^9 \times 0.023}{(33)^2} = 189808.0808 \text{ N/C}$$

$E = -189808.0808 \text{ J}$ (Ans)

d) $z = 0$

(Ans)