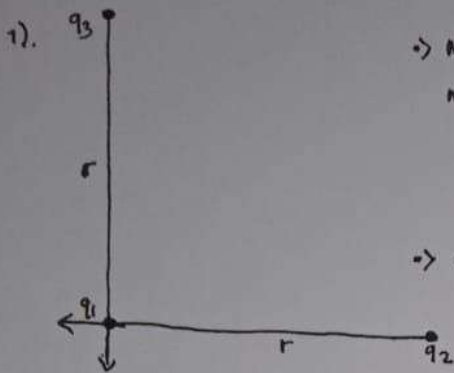


Nama : Ewian Janier Menanti

Kelas : XII MIPA 6

Tugas Fisika - Listrik Statis

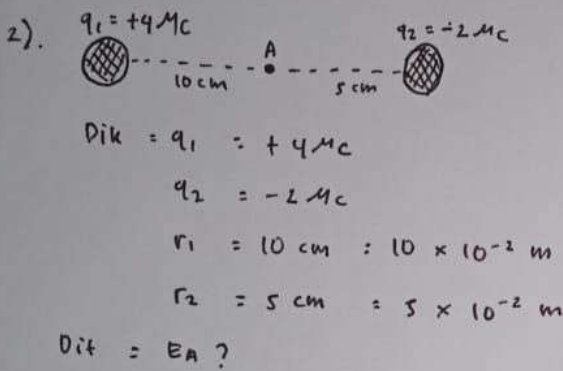


→ Muatan yang diberikan sama, maka gayanya saling menolak

$$F = \frac{k \cdot q_1 \cdot q_2}{r^2}$$

→ karena ada 2 arah, maka menggunakan vektor

$$\begin{aligned} \Sigma F &= \sqrt{F_1^2 + F_2^2 + 2F_1F_2 \cos \theta} \\ &= \sqrt{F^2 + F^2 + 2F^2 \cdot \cos 90^\circ} \\ &= \sqrt{F^2 + F^2 + 2F^2(0)} \\ &= \sqrt{2F^2} = \underline{\underline{F\sqrt{2}}} \end{aligned}$$

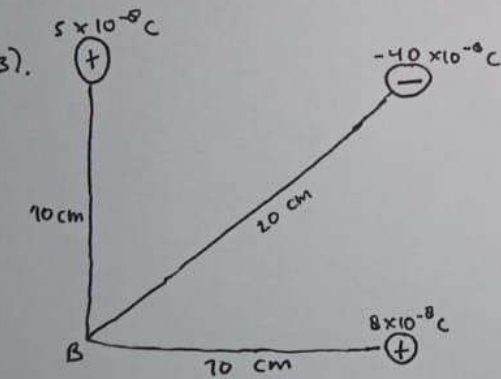


Penyelesaian :

$$\begin{aligned} E_1 &= kq \cdot \frac{q_1}{r_1^2} \\ &= 9 \cdot 10^9 \cdot \frac{4 \cdot 10^{-6}}{100 \times 10^{-4}} \\ &= \frac{36 \times 10^7}{100} \\ &= 0,36 \times 10^7 \end{aligned}$$

$$\begin{aligned} E_2 &= kq \cdot \frac{q_2}{r_2^2} \\ &= \frac{9 \times 10^9 \cdot 2 \cdot 10^{-6}}{25 \times 10^{-4}} \\ &= \frac{18 \times 10^7}{25} \\ &= 0,72 \times 10^7 \end{aligned}$$

$$\begin{aligned} E_A &= E_1 + E_2 = 0,36 \times 10^7 + 0,72 \times 10^7 \\ &= \underline{\underline{1,08 \times 10^7}} \end{aligned}$$



Penyelesaian :

$$V = k \cdot \frac{q}{r}$$

$$V_{\text{tot}} = V_A - V_B + V_C$$

$$= k \frac{q_A}{r_A} - k \frac{q_B}{r_B} + k \frac{q_C}{r_C}$$

$$= 9 \times 10^9 \left(\frac{5 \times 10^{-9}}{10 \times 10^{-2}} - \frac{40 \times 10^{-9}}{20 \times 10^{-2}} + \frac{8 \times 10^{-9}}{10 \times 10^{-2}} \right)$$

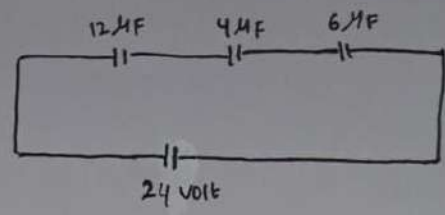
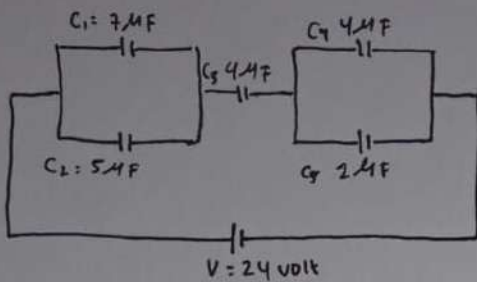
$$= 9 \times 10^9 \left(0,5 \times 10^{-6} - 2 \times 10^{-6} + 0,8 \times 10^{-6} \right)$$

$$= 9 \times 10^9 \left(-0,7 \times 10^{-6} \right)$$

$$= -6,3 \times 10^3$$

$$= \underline{\underline{-6.300 \text{ Volt}}}$$

47.



$$\begin{aligned}
 C_{p1} &= C_1 + C_2 \\
 &= 7\mu F + 5\mu F \\
 &= 12\mu F \\
 C_{p2} &= C_4 + C_5 \\
 &= 4\mu F + 2\mu F \\
 &= 6\mu F
 \end{aligned}$$

$$\frac{1}{C_{ek}} = \frac{1}{12} + \frac{1}{4} + \frac{1}{6} = \frac{2 + 6 + 4}{24}$$

$$\frac{1}{C_{ek}} = \frac{12}{24} \rightarrow C_{ek} = \frac{24}{12} = 2\mu F$$

$$\begin{aligned}
 \text{Muatan total : } Q &= C_{ek} \cdot V \\
 &= 2\mu F (24V) \\
 &= \underline{\underline{48\mu C}}
 \end{aligned}$$