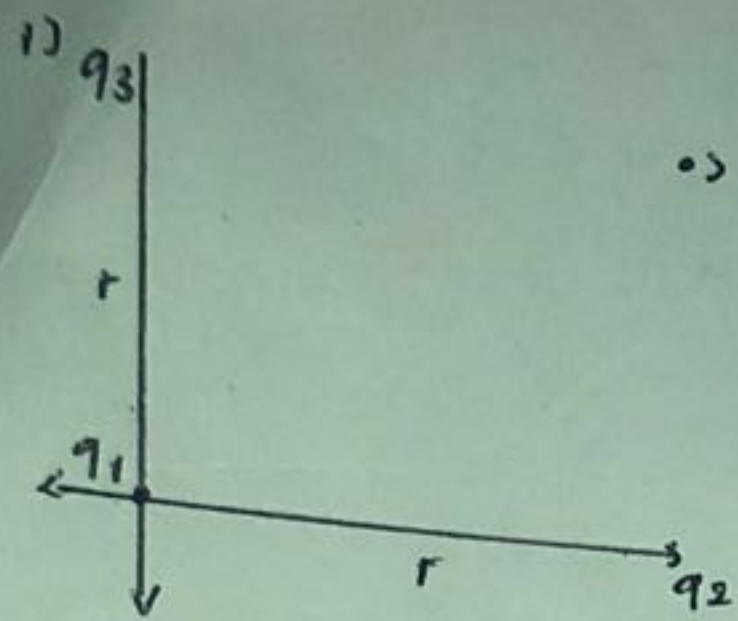


Nama: DEVI KRISTI SOKOY
 Kelas: XII - MIPA 6
 Tugas: FISIKA listrik Statis

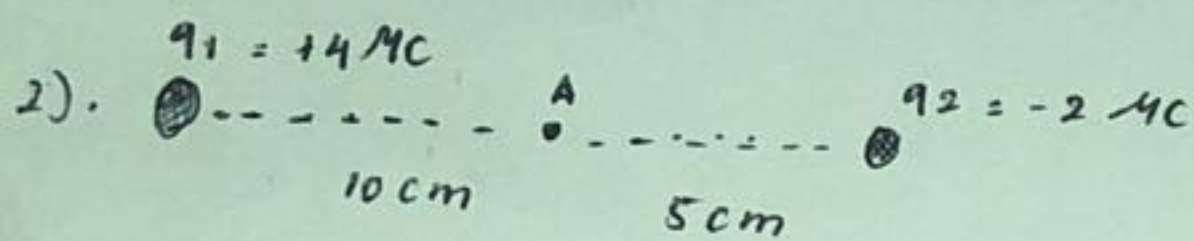


→ Muatan yang diberikan sama, maka gayanya saling menolak

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

→ Karena ada 2 arah, maka menggunakan vektor

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



Dik: $q_1 = +4 \mu C$
 $q_2 = -2 \mu C$
 $r_1 = 10 \text{ cm} = 10 \times 10^{-2} \text{ m}$
 $r_2 = 5 \text{ cm} = 5 \times 10^{-2} \text{ m}$

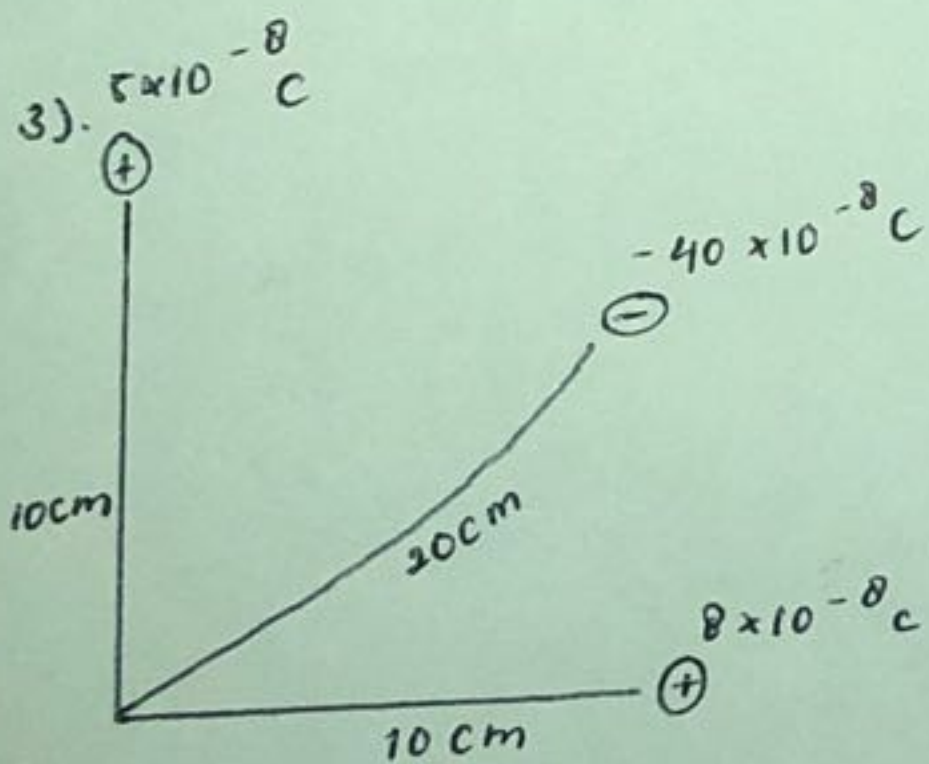
Dit: EA ?

→ penyelesaian:

$$\begin{aligned} E_1 &= k q \cdot \frac{q_1}{r_1^2} \\ &= 90 \cdot 10^9 \cdot \frac{4 \cdot 10^{-6}}{100 \times 10^{-4}} \\ &= \frac{36 \times 10^7}{100} \\ &= 0,36 \times 10^7 \end{aligned}$$

$$\begin{aligned} E_2 &= k q \cdot \frac{q_2}{r_2^2} \\ &= 90 \cdot 10^9 \cdot \frac{2 \cdot 10^{-6}}{25 \times 10^{-4}} \\ &= \frac{18 \times 10^7}{25} \\ &= 0,72 \times 10^7 \end{aligned}$$

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



Dik: $q_A = 5 \times 10^{-8} \text{ C}$
 $r_A = 10 \text{ cm} = 10 \times 10^{-2} \text{ m}$
 $q_B = -40 \times 10^{-8} \text{ C}$
 $r_B = 20 \text{ cm} = 20 \times 10^{-2} \text{ m}$
 $q_C = 8 \times 10^{-8} \text{ C}$
 $r_C = 10 \text{ cm} = 10 \times 10^{-2} \text{ m}$

Dit: V dititik B ?

→ penyelesaian:

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

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

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

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

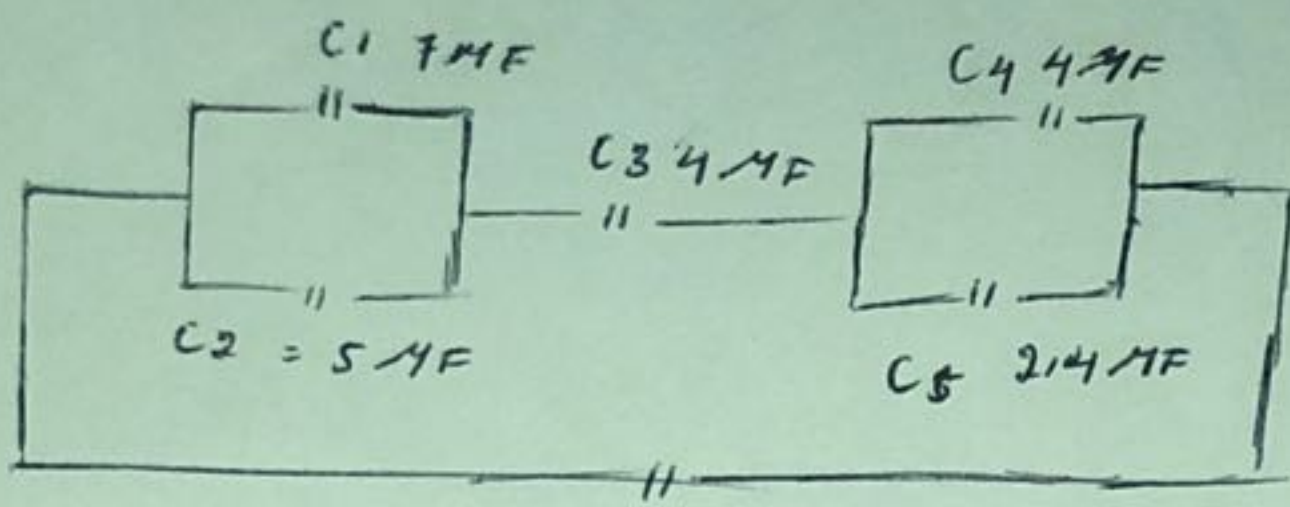
$$= 9 \times 10^9 (0,5 \times 10^{-6} - 2 \times 10^{-6} + 0,8 \times 10^{-6})$$

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

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

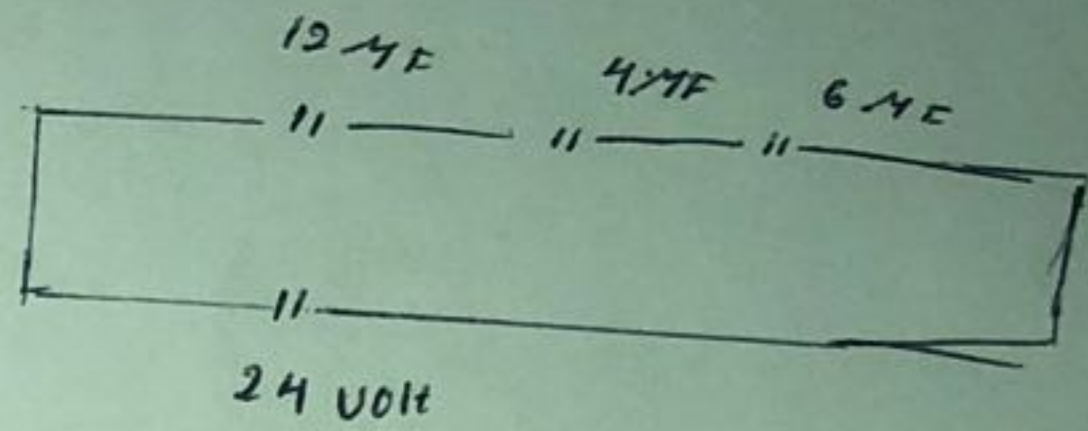
$$= -6,300 \text{ Volt}$$

4).



$$\begin{aligned}
 C_{P1} &= C_1 + C_2 \\
 &= 7 \mu F + 5 \mu F \\
 &= 12 \mu F
 \end{aligned}$$

$$\begin{aligned}
 C_{P2} &= C_4 + C_5 \\
 &= 4 \mu F + 2 \mu F \\
 &= 6 \mu F
 \end{aligned}$$



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

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

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