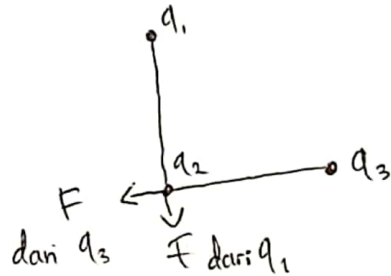


$$\Rightarrow F = \frac{k \cdot q_1 \cdot q_2}{r^2}$$

Karena muatannya sama, saling menolak gayanya.



Karena ada 2 arah, berarti menggunakan Vektor.

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

2) Dik.

$$q_1 = +4 \mu\text{C}$$

$$q_2 = -2 \mu\text{C}$$

$$r_1 = 10 \text{ cm}$$

$$= 10 \times 10^{-2} \text{ m}$$

$$r_2 = 5 \text{ cm}$$

$$= 5 \times 10^{-2} \text{ m}$$

Dit:

Besar kuat medan listrik di titik A adalah .. ?

Penye:

\* kuat medan di A disebabkan muatan  $q_1$  dan muatan  $q_2$

$$E_1 = kq \frac{q_1}{r_1^2}$$

$$= \frac{9 \times 10^9 \times 4 \times 10^{-6}}{100 \times 10^{-4}}$$

$$= \frac{36 \times 10^7}{100}$$

$$= 0,36 \times 10^7$$

$$E_2 = kq \frac{q_2}{r_2^2}$$

$$= \frac{9 \times 10^9 \times 2 \times 10^{-6}}{25 \times 10^{-4}}$$

$$= \frac{18 \times 10^7}{25}$$

$$= 0,72 \times 10^7.$$

\* kuat medan total di A  $E_A = E_1 + E_2$

$$= (0,36 \times 10^7) + (0,72 \times 10^7)$$

$$= 1,08 \times 10^7 //$$

$$3) q_A = 5 \times 10^{-8} \text{ C}$$

$$r_A = 10 \text{ cm} = 10 \cdot 10^{-2} \text{ m}$$

$$q_B = -40 \times 10^{-8} \text{ C}$$

$$r_B = 20 \text{ cm} = 20 \cdot 10^{-2} \text{ m}$$

$$q_C = 8 \times 10^{-8} \text{ C}$$

$$r_C = 10 \text{ cm} = 10 \cdot 10^{-2} \text{ m}$$

Dit :

V di titik B .. ?

Pembahasan :

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

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

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

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

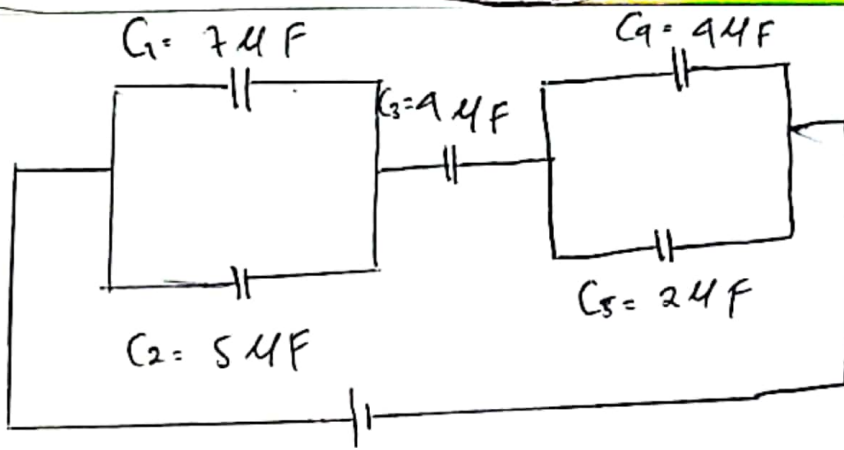
$$= 9 \times 10^9 (0,5 \times 10^{-6} - 2 \times 10^{-6} + 0,8 \times 10^{-6})$$

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

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

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

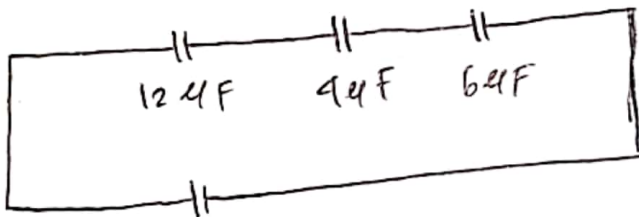
4)



$$V = 24 \text{ Volt}$$

$$\begin{aligned} C_{p1} &= C_1 + C_2 \\ &= 7 \mu\text{F} + 5 \mu\text{F} \\ &= 12 \mu\text{F} \end{aligned}$$

$$\begin{aligned} C_{p2} &= C_4 + C_5 \\ &= 4 \mu\text{F} + 2 \mu\text{F} \\ &= 6 \mu\text{F} \end{aligned}$$



$$24 \text{ Volt}$$

$$\begin{aligned} \frac{1}{C_{ek}} &= \frac{1}{12} + \frac{1}{4} + \frac{1}{6} \\ &= \frac{2 + 6 + 4}{24} \end{aligned}$$

$$= \frac{12}{24}$$

$$\begin{aligned} C_{ek} &= \frac{24}{12} \\ &= 2 \mu\text{F} \end{aligned}$$

Muatan total

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