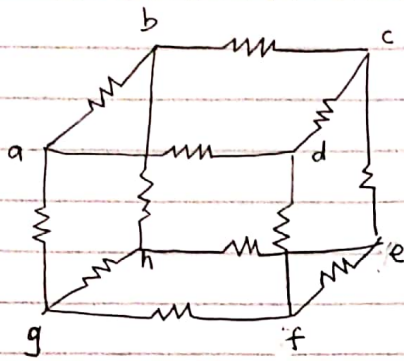


①



$$\frac{1}{R_{p1}} = \frac{1}{R_{ab}} + \frac{1}{R_{ad}} + \frac{1}{R_{ag}}$$

$$\frac{1}{R_{p2}} =$$

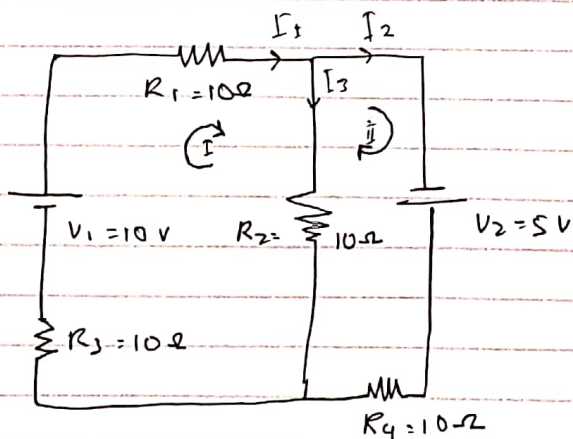
$$\frac{1}{R_{p3}} = \frac{1}{R_{ef}} + \frac{1}{R_{eh}} + \frac{1}{R_{ec}}$$

Hitung hambatan AE

$$R_{AE} = \frac{1}{R_{p1}} + \frac{1}{R_{p3}}$$

$$= \left(\frac{1}{R_{ab}} + \frac{1}{R_{ad}} + \frac{1}{R_{ag}} \right) + \left(\frac{1}{R_{ef}} + \frac{1}{R_{eh}} + \frac{1}{R_{ec}} \right)$$

②



$$V_1 > V_2$$

Hitung arus pada masing-masing loop

Jawaban:

Loop 1

$$\sum V + \sum IR = 0$$

$$-10 + 10I_3 + 20I_1 = 0$$

$$\text{Karena } I_1 = I_3 + I_2$$

$$-10 + 10I_3 + 20(I_3 + I_2) = 0$$

$$-10 + 10I_3 + 20I_3 + 20I_2 = 0$$

$$-10 + 30I_3 + 20I_2 = 0 \quad \dots\dots (1)$$

Loop 2

$$\sum V + \sum IR = 0$$

$$-5V + 10I_2 + 10I_3 = 0 \quad \dots\dots (2)$$

Substitusi

$$-10 + 30I_3 + 20I_2 = 0 \quad \left| \times 1 \right| \quad -10 + 30I_3 - 20I_2 = 0$$

$$-5 + 10I_3 + 10I_2 = 0 \quad \left| \times 3 \right| \quad -15 + 30I_3 + 30I_2 = 0$$

$$\underline{5 - 10I_2 = 0}$$

$$-10I_2 = -5$$

$$-10I_2 = -5$$

$$I_2 = \frac{-5}{-10}$$

$$I_2 = 0,5 \text{ A}$$

$$-5V + 10I_2 + 10I_3 = 0$$

$$-5 + 10(0,5) + 10I_3 = 0$$

$$-5 + (5) + 10I_3 = 0$$

$$10I_3 = 0$$

$$I_3 = 0 \text{ A}$$

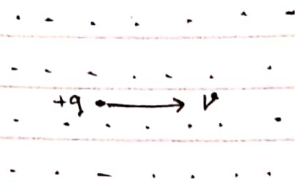
$$I_3 = I_1 + I_2$$

$$I_1 = I_3 + I_2$$

$$= (0) + (0,5)$$

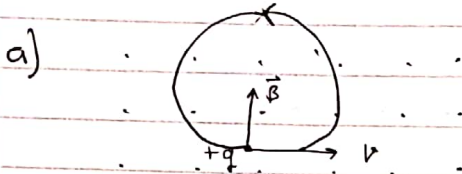
$$= 0,5 \text{ A}$$

(3)



- a) Gambar arah gerakan muatan listrik tersebut
b) Rumuskan jumlah putaran setiap detiknya.

Jawaban :



b) $\vec{B} = \frac{qv \times \vec{r}_0}{r^2}$

$$F = qv^2 \times B$$

$$F = m \cdot a$$

$$= m \left(\frac{v}{t} \right)$$

$$= \frac{v}{\left(\frac{s}{v} \right)}$$

$$qvB = m \frac{v^2}{r}$$

$$r = \frac{mv}{qB}$$

$$T = \frac{2\pi r}{v}$$

$$= \frac{2\pi \left(\frac{mv}{qB} \right)}{v}$$

$$= \frac{2\pi m}{qB}$$

$$f = \frac{1}{T}$$

$$= \frac{qB}{2\pi m}$$