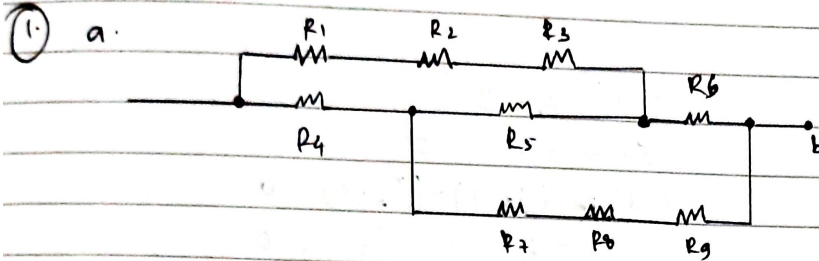


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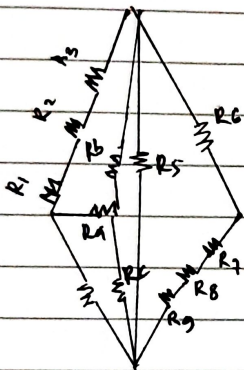
Juni
8 Mei 2024

Eendi Ratna Putri
Eendi R. P.



$$R = 5 \Omega$$

a) Hambatan Pengganti

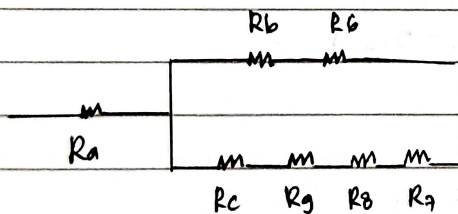


$$R_s = R_1 + R_2 + R_3 = 5 + 5 + 5 = 15 \Omega$$

$$R_a = \frac{R_5 \cdot R_4}{R_1 + R_2 + R_3 + R_4} = \frac{15 \cdot 5}{5 + 5 + 5 + 5} = \frac{75}{20} = 3,75 \text{ A}$$

$$R_b = \frac{15 \cdot 5}{5 + 5 + 5 + 5} = \frac{75}{20} = 3,75 \text{ A}$$

$$R_c = \frac{5 \cdot 5}{5 + 5} = \frac{25}{10} = 2,5 \text{ A}$$



$$R_{s1} = R_b + R_6$$

$$= 3,75 + 5 = 8,75$$

$$R_{s2} = R_c + R_9 + R_8 + R_7$$

$$= 2,5 + 5 + 5 + 5$$

$$= 17,5 \text{ A}$$

b.) $V_{ab} = 10 \text{ Volt}$

$$I = \frac{V}{R}$$

$$= \frac{10}{9,58}$$

$$= 1,04 \text{ A}$$

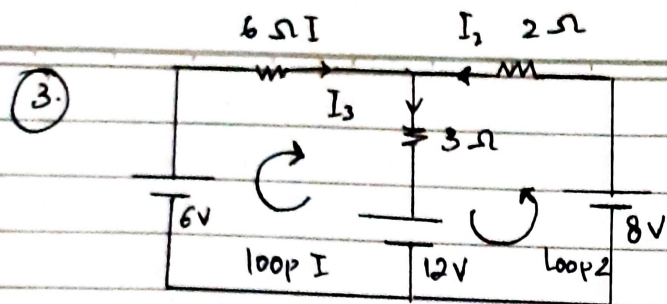
$$\frac{1}{R_p} = \frac{1}{R_{s1}} + \frac{1}{R_{s2}}$$

$$\frac{1}{R_p} = \frac{1}{8,75} + \frac{1}{17,5}$$

$$\frac{1}{R_p} = \frac{7,5}{153,125} + \frac{8,75}{153,125} = \frac{26,25}{153,125}$$

$$R_p = \frac{153,125}{26,25} = 5,83$$

$$R_{tot} = R_a + R_p = 3,75 + 5,83 = 9,58$$



$$I_3 = I_1 + I_2$$

$$I_1 = I_3 - I_2 \dots$$

Ditanya ? I ?

pada loop I

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

$$(-6 + 12) + (I_1 \cdot 6) + (I_3 \cdot 3) = 0$$

$$6 + 6I_1 + 3I_3 = 0$$

$$6I_1 + 3I_3 = -6$$

$$6(I_3 - I_2) + 3I_3 = -6$$

$$6I_3 - 6I_2 + 3I_3 = -6$$

$$9I_3 - 6I_2 = -6$$

pada loop II

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

$$(-8 + 12) + (I_2 \cdot 2) + (I_3 \cdot 3) = 0$$

$$4 + 2I_2 + 3I_3 = 0$$

$$2I_2 + 3I_3 = -4$$

$$9I_3 - 6I_2 = -6 \quad \begin{matrix} \times 1 \\ \hline \end{matrix} \quad 9I_3 - 6I_2 = -6$$

$$3I_3 + 2I_2 = -4 \quad \begin{matrix} \times 2 \\ \hline \end{matrix} \quad 9I_3 + 6I_2 = -12$$

$$-12I_2 = 6$$

$$I_2 = 6/12$$

$$= -1/2$$

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

$$2I_2 + 3I_3 = -4$$

$$2(-0,5) + 3I_3 = -4$$

$$-1 + 3I_3 = -4$$

$$3I_3 = -4 + 1$$

$$3I_3 = -3$$

$$I_3 = -3/3$$

$$= -1 \text{ A}$$

$$I_3 = I_1 + I_2$$

$$-1 = I_1 + (-0,5)$$

$$-1 + 0,5 = I_1$$

$$-0,5 \text{ A} = I_1$$

$$I_1 = -0,5 \text{ A}$$

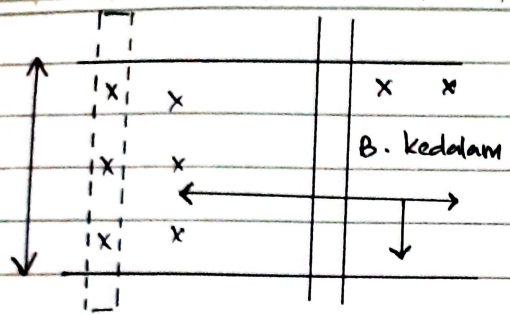
Maka nilai arus pada tiap hambatan adalah. $\therefore I_1 = -0,5 \text{ A}$

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

$$I_3 = -1 \text{ A}$$

==

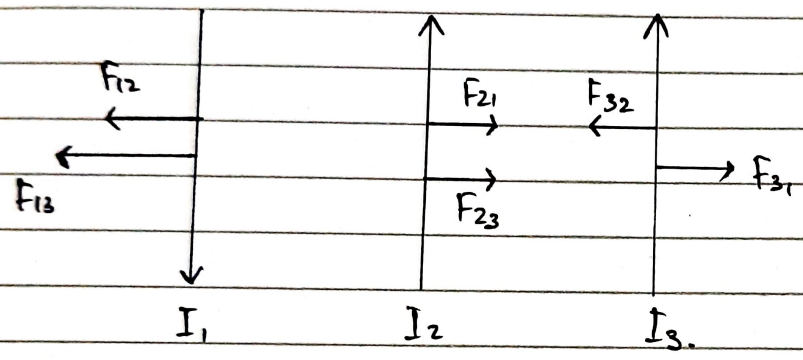
2



{ Arah arus ke kiri atau berlawanan dengan arah gerakan arah gerakan batang konduktor (V) }

Diketahui : $B = 20 \text{ Tesla}$ Maka, Tegangan yg di induksi :
 $l = 15 \text{ m}$
 $v = 10 \text{ m/s}$ $V = B \cdot l \cdot v$
 $R = 10 \Omega$ $= 20 \text{ T} \cdot 15 \text{ m} \cdot 10 \text{ m/s}$
 $= 3000 \text{ Volt}$

4



Besar arus :
 $I = \frac{V}{R} = \frac{3000}{10}$
 $= 300 \text{ A}$