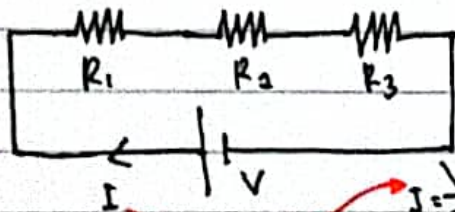
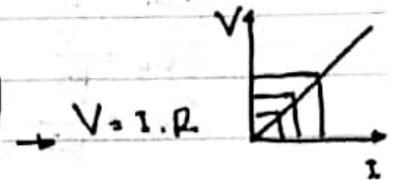
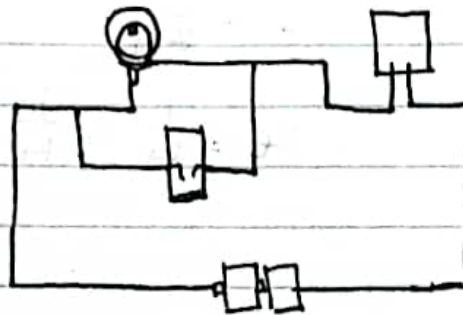
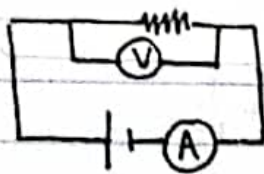


29-04-2024

Kalisma

Elektrodinamika

1. Hukum Ohm
2. Rangkaian Listrik



Note : Walaupun arusnya berbeda tetapi R_{total} nya sama

$$I = I_{R1} = I_{R2} = I_{R3}$$

$$I_{R1} = \frac{V}{(R1 + R2 + R3)}$$

$$= V_{R1}$$

$$I_{R2} = \frac{V}{(R1 + R2 + R3)}$$

$$I_{R3} =$$

$$V_{R1} = I \cdot R1$$

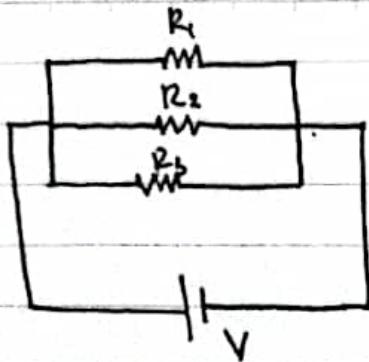
$$V_{R1} = \frac{V}{(R1 + R2 + R3)} \cdot R1$$

$$V_{R2} = I \cdot R2$$

$$V_{R2} = \frac{V}{(R1 + R2 + R3)} \cdot R2$$

$$V_{R3} = I \cdot R3$$

$$V_{R3} = \frac{V}{(R1 + R2 + R3)} \cdot R3$$



$$V_{R_1} = V_{R_2} = V_{R_3} = V$$

$$I_{R_1} = \frac{V}{R_1}$$

$$I_{R_2} = \frac{V}{R_2}$$

$$I_{R_3} = \frac{V}{R_3}$$

$$I = \frac{V}{R_{total}}$$

$$R_t = \frac{1}{R_t} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$$

example :

$$\frac{1}{R_t} = \frac{1}{2} + \frac{1}{3} + \frac{1}{4}$$

$$= \frac{6}{12} + \frac{4}{12} + \frac{3}{12}$$

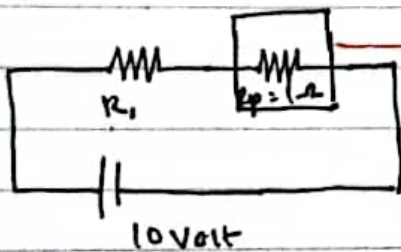
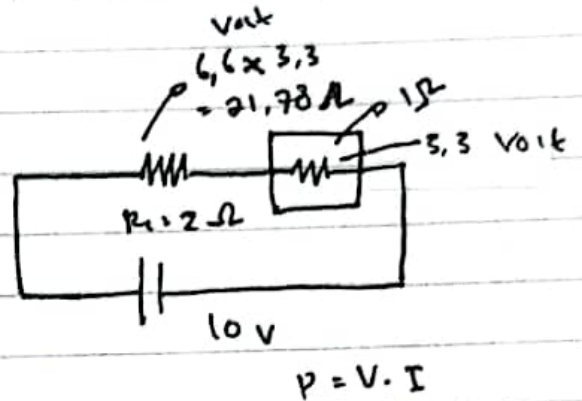
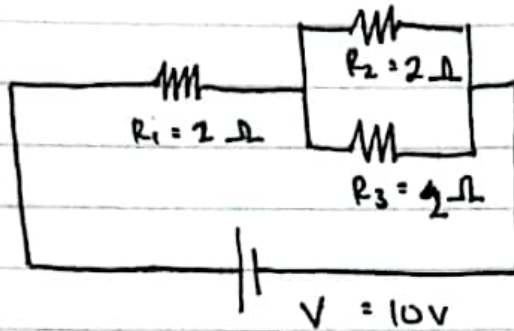
$$\frac{1}{R_t} = \frac{13}{12}$$

$$= 0.92$$

$$I = \frac{20}{0.92}$$

$$= 21.73 \text{ A}$$

Hukum Kirchoff



$$\frac{1}{R_p} = \frac{1}{2} + \frac{1}{2}$$

$$\frac{1}{R_p} = \frac{2}{2}$$

$$R_p = 1\Omega$$

$$R_t = R_1 + R_p = 2 + 1 = 3\Omega$$

$$I_{R1} = \frac{V}{R_t} = \frac{10}{3} = 3.33\text{ A}$$

$$I_{R1} = 3.33\text{ A}$$

$$I_{R2} = 3.33 \rightarrow V_{R2} = R_p \cdot I = 1 \cdot 3.3 = 3.3\text{ Volt}$$

$$I_{R2} = \frac{1}{R_1} = \frac{V_{R2}}{R_2} = \frac{3.33}{2}$$

$$I = \frac{10}{3} = 3.3\text{ A} = 3.3 \times 3.3 = 9.9\Omega$$