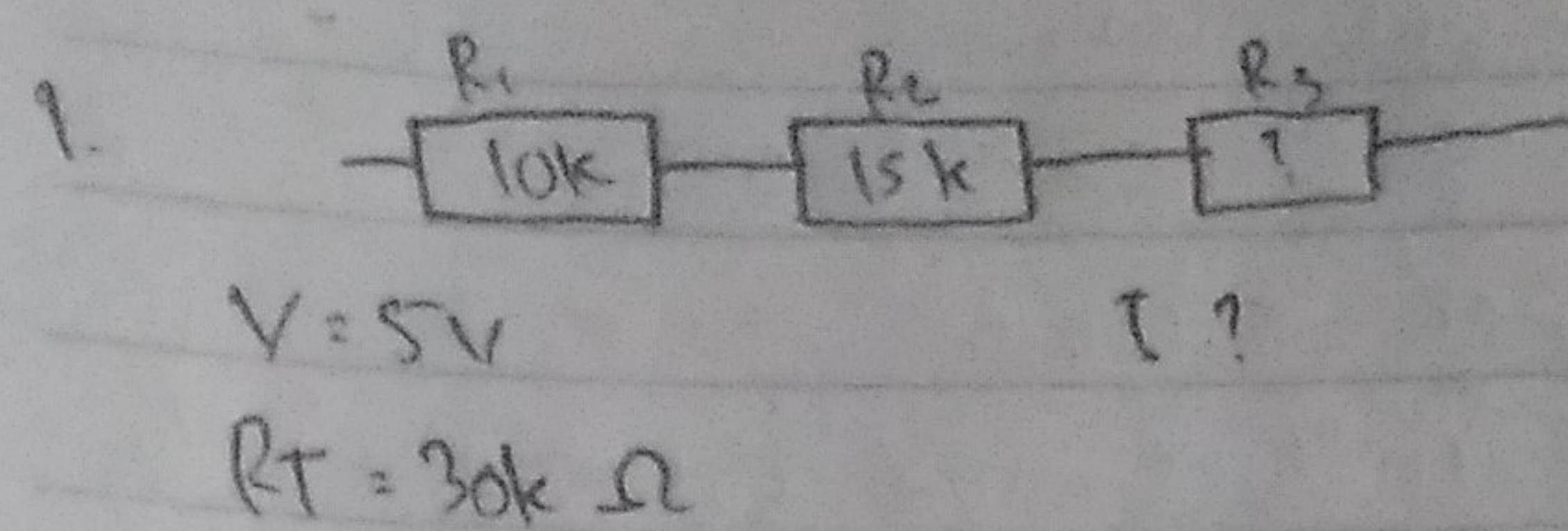


## Rangkaian Seri



Jaw :

$$RT = R_1 + R_2 + R_3$$

$$30k = 10k + 15k + R_3$$

$$30k = 25k + R_3$$

$$R_3 = 30k - 25k = 5k \Omega$$

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

$$= \frac{5}{30k} = 0.00016 A$$

2.  $R_1 = 25,5k \Omega$     $R_2 = 70 \Omega$     $R_3 = 150 \Omega$

$$V = 15V$$

$$RT = ?$$

$$I = ?$$

Jaw :

$$\begin{aligned} RT &= R_1 + R_2 + R_3 \\ &= 25,5k + 70 + 150 \\ &= 25,500 + 70 + 150 \\ &= 25,720 \Omega \end{aligned}$$

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

$$= \frac{15}{25,720} = 0.00058 A$$

3.  $V = 5V$

$$RT = 100k \Omega \quad I = ?$$

$$R_1 = 25k \Omega$$

$$R_2 = 15k \Omega \quad R_3 = ?$$

Jaw :

$$RT = R_1 + R_2 + R_3$$

$$100k = 25k + 15k + R_3$$

$$100k = 40k + R_3$$

$$R_3 = 100k - 40k$$

$$= 60k \Omega$$

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

$$= \frac{5}{100k} = \frac{5}{100,000}$$

$$= 0.00005 A$$

## Nilai Resistor

1. Hijau - orange - Hitam - Perak  
 5      3      0      10%

$$R = 53 \times 10^3 = 53k\Omega$$

$53k\Omega - 10\%$  sampai  $53k\Omega + 10\%$   
 47.7k $\Omega$  sampai 58.3k $\Omega$

2. kuning - merah - merah - Emas

4      2      2      5%

$$R = 42 \times 10^2 = 4200 = 4.2k\Omega$$

$4.2k\Omega - 5\%$  sampai  $4.2k\Omega + 5\%$   
 3.99k $\Omega$  sampai 4.41k $\Omega$

3. hijau - hijau - orange - x

5      5      3      20%

$$R = 55 \times 10^3 = 55.000 = 55k\Omega$$

$55k\Omega - 20\%$  sampai  $55k\Omega + 20\%$   
 44k $\Omega$  sampai 66k $\Omega$

4. orange - orange - kuning - Perak

3      3      4      10%

$$R = 33 \times 10^3 = 330.000 = 330k\Omega$$

$330k\Omega - 10\%$  sampai  $330k\Omega + 10\%$   
 297k $\Omega$  sampai 363k $\Omega$

5. abu<sup>2</sup> - Hitam - merah - emas

8      0      2      6%

$$R = 80 \times 10^2 = 8.000 = 8.0k\Omega$$

$8.0k\Omega - 5\%$  sampai  $8.0k\Omega + 5\%$   
 7.6k $\Omega$  sampai 8.4k $\Omega$

6. ungu - hijau - Hitam - x

7      5      0      20%

$$R = 75 \times 10^3 = 750 = 75k\Omega$$

$75k\Omega - 20\%$  sampai  $75k\Omega + 20\%$   
 60k $\Omega$  sampai 90k $\Omega$

7. ungu - merah - ungu - perak

7      2      7      10%

$$R = 72 \times 10^3 = 720.000 = 720M\Omega$$

$720M\Omega - 10\%$  sampai  $720M\Omega + 10\%$   
 648M $\Omega$  sampai 792M $\Omega$

8. hijau - hijau - hijau - x  
 5      5      5      20%

$$R = 55 \times 10^3 = 5.000.000 = 5.5M\Omega$$

$5.5M\Omega - 20\%$  sampai  $5.5M\Omega + 20\%$   
 4.4M $\Omega$  sampai 6.6M $\Omega$

9. biru - hijau - ungu - Emas

6      5      7      5%

$$R = 65 \times 10^3 = 650.000 = 650k\Omega$$

$650k\Omega - 5\%$  sampai  $650k\Omega + 5\%$   
 617.5k $\Omega$  sampai 682.5k $\Omega$

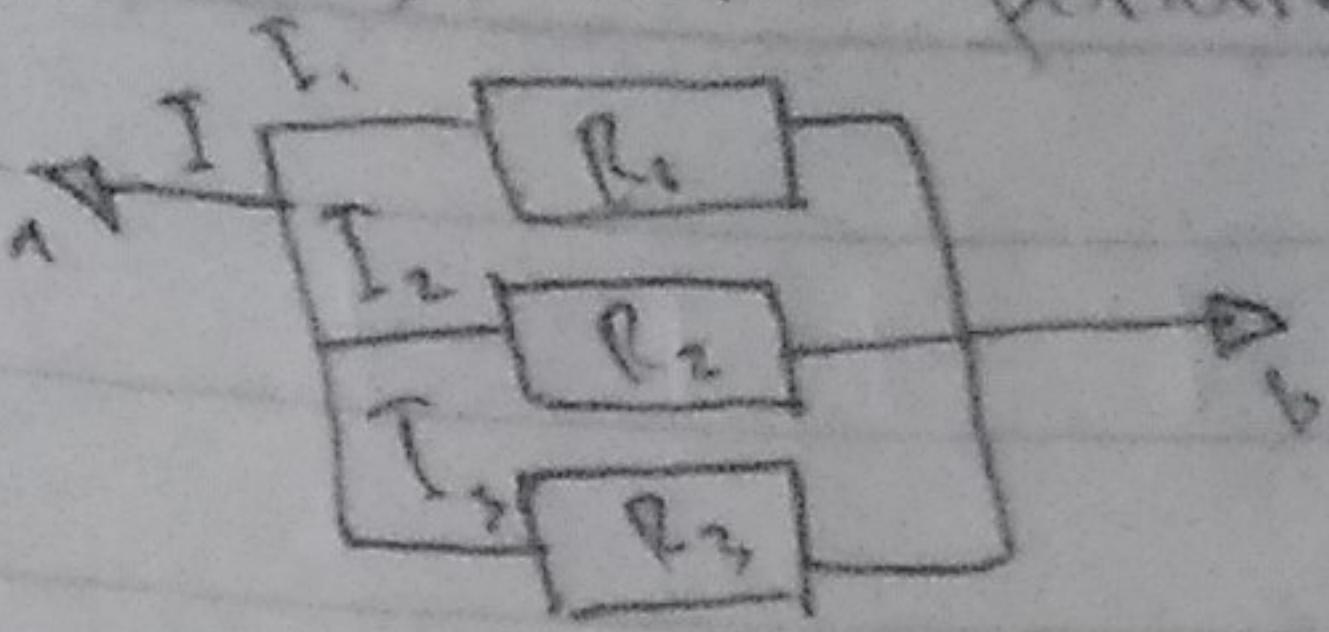
10. kuning - hijau - biru - x

4      5      6      20%

$$R = 45 \times 10^3 = 45.000 = 45M\Omega$$

$45M\Omega - 20\%$  sampai  $45M\Omega + 20\%$   
 36M $\Omega$  sampai 54M $\Omega$

Rangkutan paralel



$$V_{ab} = 15 \text{ V}$$

$$R_1 = 15 \text{ k}\Omega$$

$$R_3 = 100 \text{ }\Omega$$

$$R_2 = 50 \text{ }\Omega$$

$$R_T = ?$$

Jaw:

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

$$= \frac{1}{15k} + \frac{1}{50} + \frac{1}{100}$$

$$= \frac{1}{15k} + \frac{300}{15k} + \frac{150}{15k}$$

$$= \frac{451}{15k}$$

$$R_T = \frac{15k}{451} = 33,12 \text{ }\Omega$$

$$2. V_{ab} = 5 \text{ V} \quad R_1 = 10 \text{ }\Omega \quad R_2 = 150 \text{ k}\Omega \quad R_3 = 200 \text{ }\Omega$$

$$I_1 = 0,5 \text{ A} \quad R_T = ?$$

$$\text{jaw: } \frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$$

$$= \frac{1}{10} + \frac{1}{150k} + \frac{1}{200}$$

$$= \frac{10k}{150k} + \frac{1}{150k} + \frac{750}{150k}$$

$$= \frac{15,751}{150k}$$

$$R_T = \frac{150k}{15,751} = 9,52 \text{ }\Omega$$

$$3. V_{ab} = 5 \text{ V}$$

$$I_1 = ?$$

$$R_1 = 150 \text{ k}\Omega$$

$$I_2 = ?$$

$$R_2 = 25 \text{ k}\Omega$$

$$I_3 = ?$$

$$R_3 = 100 \text{ }\Omega$$

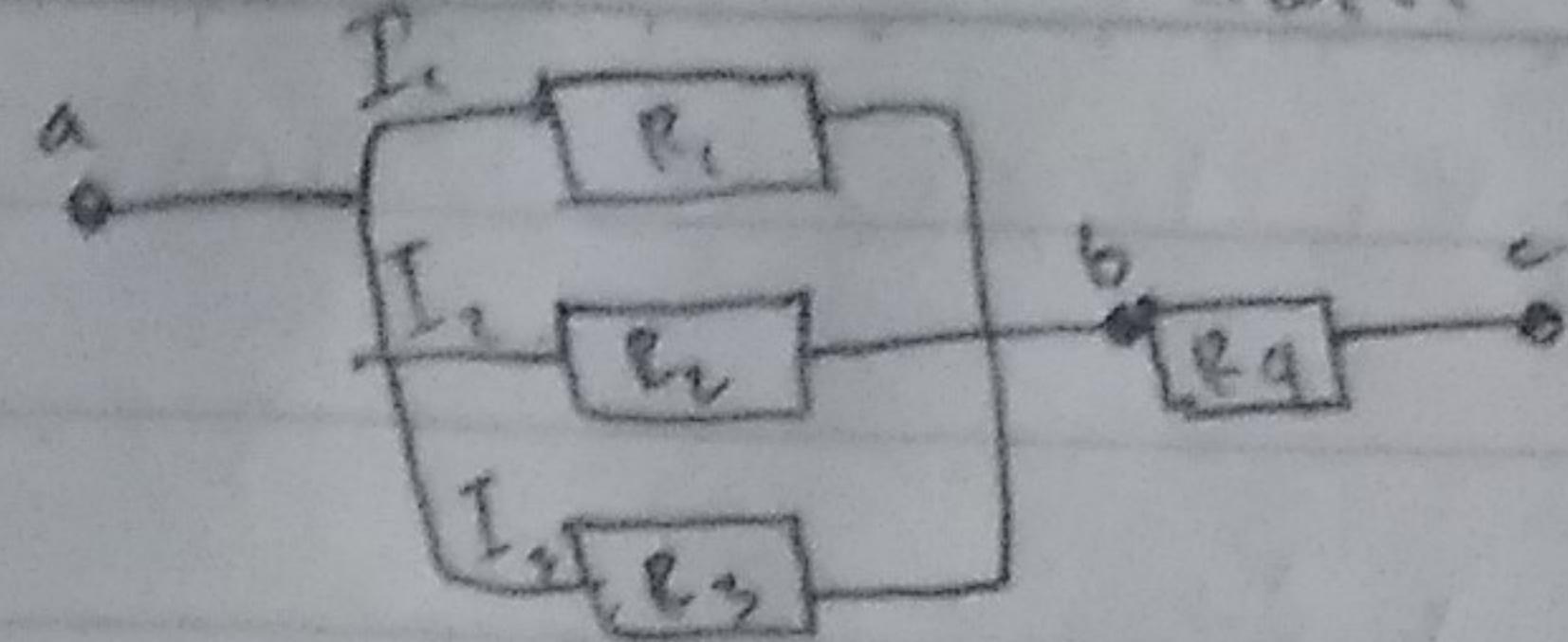
Jaw:

$$I_1 = \frac{V_{ab}}{R_1} = \frac{5}{150.000} = 3,33 \text{ A}$$

$$I_2 = \frac{V_{ab}}{R_2} = \frac{5}{25.000} = 0,0002 \text{ A}$$

$$I_3 = \frac{V_{ab}}{R_3} = \frac{5}{100} = 0,05 \text{ A}$$

Rangkaran kombinasi



$$1. R_1 = 100 \Omega$$

$$R_2 = 1k \Omega$$

$$R_3 = 15k \Omega$$

$$R_q = 100k \Omega$$

Cari lah R pararel

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

$$= \frac{1}{100} + \frac{1}{1k} + \frac{1}{15k}$$

$$= \frac{1}{15k} + \frac{1}{15k} + \frac{1}{15k}$$

$$= \frac{1}{15k} = \frac{15k}{166} = 90,3 \Omega$$

                                   
R<sub>p</sub>      R<sub>q</sub>

$$R_T = ?$$

$$2. I = 2A \quad V_{bc} = ?$$

Jaw:

$$V = I \cdot R$$

$$V_{bc} = I \cdot R_q \\ = 2 \cdot 100k \Omega \\ = 200.000$$

$$V = 200kV$$

$$3. R_1 = 100k \Omega$$

$$R_2 = 47k \Omega$$

$$R_3 = ?$$

$$R_q = 180k \Omega$$

$$\text{bila } I = 2A \quad V_{ac} = 15V$$

Jaw:

$$V_{ac} = 15V$$

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

$$R_3 = \frac{15}{2}$$

$$R_3 = 7,5 \Omega$$

$$R_T = R_p + R_q$$

$$= 90,3 \Omega + 100k \Omega$$

$$= 100.090,3 \Omega$$