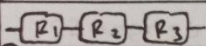
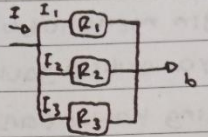
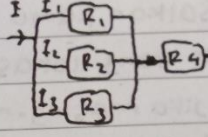


## Tugas Fisika

Nama : Muhamad Sahal Fadilah

Nim : 233051015

Prodi : Teknologi Komputer

Rangkaian Seri	Nilai resistor	Rangkaian Paralel	Rangkaian kombinasi
 <p>1. <math>R_1 = 10 \text{ k}\Omega</math>  <math>R_2 = 15 \text{ k}\Omega</math>  <math>R_3 = ?</math> <math>R_{total} = ?</math>  <math>I = 2 \text{ A}</math>  <math>V = 5 \text{ V}</math></p>	<p>1. Hijau - orange - Hitam - Perak  2. Kuning - merah - merah - emas  3. Hijau - hijau - orange - x  4. orange - orange kuning - perak  5. Abu<sup>2</sup> - hitam - merah - emas  6. ungu - hijau - hitam - x  7. ungu - merah - ungu - perak  8. Hijau - hijau - hijau - x  9. Biru - hijau - ungu - emas  10. Kuning - hijau - biru - x</p>	 <p>1. <math>V_{ab} = 15 \text{ V}</math>  <math>R_1 = 15 \text{ k}\Omega</math>, <math>R_2 = 50 \Omega</math>  <math>R_3 = 100 \Omega</math>  <math>R_T = ?</math>  2. <math>V_{ab} = 5 \text{ V}</math>  <math>I_1 = 0.5 \text{ A}</math>  <math>R_1 = 10 \Omega</math>  <math>R_2 = 150 \text{ k}\Omega</math>  <math>R_3 = 200 \Omega</math>  3. <math>V_{ab} = 5 \text{ V}</math>  <math>R_1 = 150 \text{ k}\Omega</math>  <math>R_2 = 25 \text{ k}\Omega</math>  <math>R_3 = 100 \Omega</math>  <math>I_1 = ?</math>  <math>I_2 = ?</math>  <math>I_3 = ?</math></p>	 <p>1. <math>R_1 = 100 \Omega</math> <math>R_4 = 100 \text{ k}\Omega</math>  <math>R_2 = 1 \text{ k}\Omega</math> <math>R_T = ?</math>  <math>R_3 = 15 \text{ k}\Omega</math>  2. Dari Soal 1 : berapa <math>V_{bc}</math> ? bila <math>I = 2 \text{ A}</math>  3. <math>R_1 = 100 \text{ k}\Omega</math>  <math>R_2 = 47 \text{ k}\Omega</math>  <math>R_3 = ?</math>  <math>R_4 = 150 \text{ k}\Omega</math>  Bila : <math>I = 2 \text{ A}</math>  <math>V_{ac} = 15 \text{ V}</math></p>
<p>2. <math>R_1 = 25.5 \text{ k}\Omega</math>  <math>R_2 = 70 \Omega</math>  <math>R_3 = 150 \Omega</math>  <math>V = 15 \text{ V}</math> : <math>R_T = ?</math>  <math>I = ?</math></p>			
<p>3. <math>V = 5 \text{ V}</math>  <math>R_T = 100 \text{ k}\Omega</math>  <math>R_1 = 25 \text{ k}\Omega</math>  <math>R_2 = 15 \text{ k}\Omega</math>  <math>R_3 = ?</math> <math>I = ?</math></p>			

### Rangkaian Seri

$$1. R_T = R_1 + R_2 + R_3 \dots$$

$$30 \text{ k} = 10 \text{ k} + 15 \text{ k} + R_3$$

$$30 \text{ k} = 25 \text{ k} + R_3 \rightarrow R_3 = 30 \text{ k} - 25 \text{ k} = 5 \text{ k} \Omega$$

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

$$= \frac{5}{30} = 0,00016 \text{ A}$$

$$2. R_T = R_1 + R_2 + R_3$$

$$= 25,5 \text{ k} + 70 + 150$$

$$= 25.500 + 70 + 150$$

$$= 25.720 \Omega$$

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

$$= \frac{15}{25.720} = 0,00058 \text{ A}$$

$$3. R_T = R_1 + R_2 + R_3$$

$$100 = 25 + 15 + R_3$$

$$R_3 = 100 - 40$$

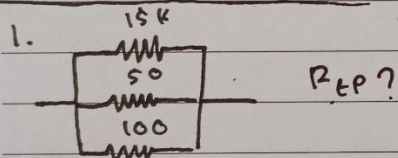
$$= 60 \text{ k} \Omega$$

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

$$= \frac{5}{100 \text{ k}} = \frac{5}{100.000} = 0,00005 \text{ A}$$

Nilai resistor

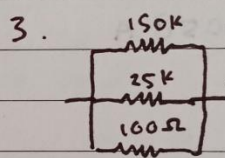
1.  $53 \Omega$  10% — (47.7 — 58.3  $\Omega$ )
2.  $420 \Omega$  5% — (399 — 441  $\Omega$ )
3.  $55k \Omega$  20% — (44k — 66k  $\Omega$ )
4.  $330k \Omega$  10% — (297k — 363k  $\Omega$ )
5.  $810 \Omega$  5% — (769.5 — 850.5  $\Omega$ )
6.  $75 \Omega$  10% — (60 — 90  $\Omega$ )
7.  $710 M \Omega$  10% — (648 m — 792 m  $\Omega$ )
8.  $5.5 m \Omega$  10% — (5.225.000 — 5.775.000  $\Omega$ )
9.  $65k \Omega$  5% — (61.750 — 68.250  $\Omega$ )
10.  $45 m \Omega$  20% — (36 m — 54 m  $\Omega$ )

Rangkaian Paralel

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

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

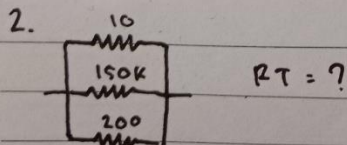
$$= \frac{451}{15k} = \frac{15k}{451} = 33.25 \Omega$$



$$I_1 = ? : I = \frac{5}{150k} = 0.00003 A$$

$$I_2 = ? : I = \frac{5}{25k} = 0.0002 A$$

$$I_3 = ? : I = \frac{5}{100} = 0.05 A$$



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

$$= \frac{15.751}{150k} = \frac{150k}{15.751}$$

$$R_t = \frac{1}{150k} + \frac{15k}{150k} + \frac{750}{150k}$$

$$= 9.52 \Omega$$

### Rangkaian kombinasi

$$1. \frac{1}{R_P} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$$

$$= \frac{1}{100} + \frac{1}{1.000} + \frac{1}{15.000}$$

$$= \frac{150 + 15 + 1}{15.000}$$

$$= \frac{166}{15.000}$$

$$R_P = \frac{166}{15.000}$$

$$R_T = R_P + R_4$$

$$= 90,36 + 100.000$$

$$= 100.090,36 \Omega$$

$$2. V = I \cdot R$$

$$= 2 \cdot 100.090,36$$

$$= 200.180,72 \text{ V}$$

$$3. R_T = R_P + R_4$$

$$= R_P + 150.000$$

$$R = \frac{V}{I} = \frac{15}{2} = 7,5 \Omega$$

Dari Pembuktian rumus  $R = \frac{V}{I}$  diperoleh  $7,5 \Omega$