

Tugas fisika

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Kelas Tekom C

Fisika

Rangkaian seri **Nilai resistor**

Sandi a
Kelas **TEKOM C**

1. $I_1 = 10 \text{ k}\Omega$
 $I_2 = 15 \text{ k}\Omega$
 $R_3 = ?$ $I_{\text{total}} = ?$
 $I = 2 \text{ A}$
 $V = 5 \text{ V}$
 $2. R_1 = 255 \text{ k}\Omega$
 $R_2 = 70 \text{ }\Omega$
 $R_3 = 150 \text{ }\Omega$
 $V = 15 \text{ V}$
 $R_1 : R_2 : ?$
 $I = ?$

3. $V = 5 \text{ V}$
 $R_1 = 100 \text{ k}\Omega$
 $R_2 = 25 \text{ k}\Omega$
 $R_3 = ?$ $I = ?$

Rangkaian paralel

1. $V_{ab} = 1 \text{ V}$
 $I_1 = 0.5 \text{ A}$
 $R_2 = ?$
 $R_3 = 200 \text{ }\Omega$

2. $V_{ab} = 5 \text{ V}$
 $R_1 = 150 \text{ k}\Omega$
 $R_2 = 25 \text{ k}\Omega$
 $R_3 = 100 \text{ }\Omega$
 $I_1 = ?$ $I_2 = ?$ $I_3 = ?$

Rangkaian kombinasi

3. $R_1 = 100 \text{ k}\Omega$
 $R_2 = 47 \text{ k}\Omega$
 $R_3 = ?$
 $I_4 = 150 \text{ k}\Omega$
 $I_{\text{total}} = 1 = 2 \text{ A}$
 $V_{ac} = 15 \text{ V}$
 $R_3 = 15 \text{ k}\Omega$

1. $V_1 = 100 \text{ }\Omega$
 $R_2 = 1 \text{ k}\Omega$
 $R_3 = ?$
 $I_{\text{total}} = ?$

2. dari soal 1 berapa V_{bc} ?
bilangan 1 = 2A

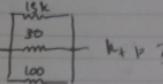
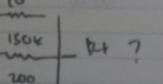
Rangkaian seri

- $V = 1.12$
 $I = \frac{V}{R}$
 $= \frac{5}{30k} = 0,00016 A$
- $R_t = R_1 + R_2 + R_3$
 $= 25,5k + 70 + 150$
 $= 25,500 + 70 + 150$
 $= 25.720 \Omega$
- $R_t = R_1 + R_2 + R_3$
 $100 = 25 + 15 + R_3$
 $R_3 = 100 - 40$
 $= 60k \Omega$
- $P_t = 25k\Omega + 15k\Omega + 60k\Omega = \frac{5}{100000} = 0,00005 A$
 $R_{total} = 100k \Omega$

nilai resistor

- $53 \Omega 10\% - (47,7 - 58,3 \Omega)$
- $470 \Omega 5\% - (399 - 441 \Omega)$
- $55k\Omega 20\% - (44k - 66k \Omega)$
- $330k\Omega 10\% - (297k - 363k \Omega)$
- $810 \Omega 5\% - (769,5 - 850,5 \Omega)$
- $75 \Omega 10\% - (60 - 90 \Omega)$
- $710M\Omega 10\% - (698M - 792M \Omega)$

Rangkaian paralel

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 $I = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$
 $\frac{1}{R_t} = \frac{1}{15k} + \frac{1}{50} + \frac{1}{100}$
 $\frac{1}{R_t} = \frac{45}{15k} = \frac{15k}{45} = 33,33 \Omega$
- 
 $I_1 = ? = \frac{1}{150k}$
 $I_2 = ? = \frac{1}{200}$
 $I_3 = ? = \frac{1}{10}$
 $I_t = I_1 + I_2 + I_3 = \frac{1}{150k} + \frac{1}{200} + \frac{1}{10}$
 $\frac{1}{I_t} = \frac{1}{150k} + \frac{1}{200} + \frac{1}{10}$
 $\frac{1}{I_t} = \frac{15.751}{150k} = \frac{150k}{15.751} = 9,52 \Omega$

hangkatan kombinasi

$$\begin{aligned}1. \frac{1}{R_p} &= \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_s} \\&= \frac{1}{100} + \frac{1}{1000} + \frac{1}{15000} \\&= \frac{150}{15000} + \frac{15}{15000} + \frac{1}{15000} \\&\approx \frac{166}{15000} \\R &= \frac{15000}{166} \\&= 90,36 \quad R_t = 90,36 + 100\Omega \\R_{tp} &= 90,36 \quad : 100,090,36 \Omega\end{aligned}$$

$$\begin{aligned}2. V &= 112 \\&\approx 2.100 \cdot 0,90,36 \\&\approx 180 \cdot 72 \text{ V}\end{aligned}$$

$$3. R_t = R_p + R_s \quad R = \frac{V}{I} = \frac{15}{2} = 7,5 \Omega \\= R_p + 150.000$$