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Latihan 1 – Elektronika

No
Date

Tugas Elektronika Pertemuan 1

1. Hitung R ekuivalen (Total dari rangkaian di bawah ini!)

Jawab:

$$R_s = R_1 + R_2 + R_3 + R_4 + R_5$$

$$= 1 + 1 + 2 + 2 + 1$$

$$= 7 \Omega$$

2. Hitung ekuivalen dari rangkaian di bawah ini!

Jawab:

$$R_s = R_1 + R_2 + R_3 + R_4 + R_5 + R_6$$

$$= 1 + 1 + 1 + 1 + 1 + 1$$

$$= 6 \Omega$$

3. Hitung R ekuivalen dari rangkaian dibawah ini!

Jawab:

$$R_s = R_1 + R_2 + R_3 + R_4 + R_5$$

$$= 2 + 3 + 6 + 4 + 5$$

$$= 20 \Omega$$

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4. Hitung R ekuivalen dari rangkaian di bawah ini!

Jawab:

$$R_{p1} = R_1 + R_2 = 2 + 1 = 3 \Omega$$

$$R_{p2} = R_3 + R_4 = 4 + 5 = 9 \Omega$$

$$R_{p3} = R_5 + R_6 = 3 + 12 = 15 \Omega$$

$$R_s = \frac{1}{\frac{1}{R_{p1}} + \frac{1}{R_{p2}} + \frac{1}{R_{p3}}}$$

$$= \frac{1}{\frac{1}{3} + \frac{1}{9} + \frac{1}{15}}$$

$$= \frac{1}{\frac{10}{30} + \frac{4}{30} + \frac{2}{15}}$$

$$= \frac{1}{\frac{10+4+4}{30}} = \frac{1}{\frac{18}{30}} = \frac{30}{18} = 1.67 \Omega$$

5. Hitung R ekuivalen dari rangkaian di bawah ini!

Jawab:

$$R_{p1} = R_1 + R_2 = 10 + 2 = 12 \Omega$$

$$R_{p2} = R_3 + R_4 = 7 + 3 = 10 \Omega$$

$$R_{p3} = R_5 + R_6 = 10 + 10 = 20 \Omega$$

$$R_s = \frac{1}{\frac{1}{R_{p1}} + \frac{1}{R_{p2}} + \frac{1}{R_{p3}}}$$

$$= \frac{1}{\frac{1}{12} + \frac{1}{10} + \frac{1}{20}}$$

$$= \frac{1}{\frac{5}{60} + \frac{6}{60} + \frac{3}{60}} = \frac{1}{\frac{14}{60}} = \frac{60}{14} = 4.29 \Omega$$

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6. Hitung R ekuivalen dari rangkaian dibawah ini

Jawab:

$$R_{p1} = R_1 + R_2 = 10 + 2 = 12 \Omega$$

$$R_{p2} = R_3 + R_4 = 5 + 1 = 6 \Omega$$

$$R_{p3} = R_5 + R_6 = 1 + 1 = 2 \Omega$$

$$R_s = \frac{1}{\frac{1}{R_{p1}} + \frac{1}{R_{p2}} + \frac{1}{R_{p3}}}$$

$$= \frac{1}{\frac{1}{12} + \frac{1}{6} + \frac{1}{2}}$$

$$= \frac{1}{\frac{1}{12} + \frac{2}{12} + \frac{6}{12}} = \frac{1}{\frac{9}{12}} = \frac{12}{9} = 1.33 \Omega$$

7. Hitung R ekuivalen dari rangkaian dibawah ini!

Jawab:

$$R_{p1} = R_1 + R_2 = 2 + 1 = 3 \Omega$$

$$R_{p2} = R_3 + R_4 = 1 + 1 = 2 \Omega$$

$$R_{p3} = R_5 + R_6 = 1 + 1 = 2 \Omega$$

$$R_s = \frac{1}{\frac{1}{R_{p1}} + \frac{1}{R_{p2}} + \frac{1}{R_{p3}}}$$

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

$$= \frac{1}{\frac{2}{6} + \frac{3}{6} + \frac{3}{6}} = \frac{1}{\frac{8}{6}} = \frac{6}{8} = 0.75 \Omega$$

8. Hitung R ekuivalen dari rangkaian dibawah ini!

Jawab:

$$R_{p1} = R_1 + R_2 = 2 + 1 = 3 \Omega$$

$$R_{p2} = R_3 + R_4 = 1 + 1 = 2 \Omega$$

$$R_{p3} = R_5 + R_6 = 1 + 1 = 2 \Omega$$

$$R_s = \frac{1}{\frac{1}{R_{p1}} + \frac{1}{R_{p2}} + \frac{1}{R_{p3}}}$$

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

$$= \frac{1}{\frac{2}{6} + \frac{3}{6} + \frac{3}{6}} = \frac{1}{\frac{8}{6}} = \frac{6}{8} = 0.75 \Omega$$