

Chapter 9 Circuit analysis and design. (Revision Questions page 264). Multiple Choice Answers

Q	Ans	Explanation
1	D	$P = VI = 6.0 \times 1.2 = 7.2 \text{ W}$
2	B	There is a mistake in the wording of Option B. It should read “2 Ω and 4 Ω are in parallel and the combination is in series with 6 Ω ”. Then Option (B) would be correct. Option(D) is almost correct but should say the combination of 2/4 ohms is in series with it.
3	A	$\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} \dots \frac{1}{R_n}$ <p>For first combination</p> $\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} = \frac{1}{1} + \frac{1}{1} = 2$ $R_T = \frac{1}{2} = 0.5\Omega$ <p>For second combination</p> $\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} = \frac{1}{1} + \frac{1}{1} = 2$ $R_T = \frac{1}{2} = 0.5\Omega$ <p>For both combined in series</p> $R_T = R_1 + R_2 + R_3 + \dots R_n$ $= 0.5 + 0.5 = 1\Omega$
4	B	$P = \frac{W}{t} \text{ (from Formula book)}$ $W = Pt$ $P = I^2 R \text{ (from Formula book)}$ $W = I^2 Rt$
5	D	<p>The 3 resistors are in series, so their equivalent resistance (or total resistance) is $3 + 6 + 9 = 18 \Omega$.</p> $I = V/R = 36/18 = 2 \text{ A}$

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