NEW CENTURY PHYSICS FOR QUEENSLAND U1&2

EXPLANATIONS FOR MULTIPLE CHOICE QUESTIONS - BY DR RICHARD WALDING

Chapter 8 Resistance. (Revision Questions page 242). Multiple Choice Answers

Q	Ans	Explanation
1	В	$R=V/I = 12.0/2.0 = 6.0 \Omega$. The answer of 6 Ω is correct even though it has just the one significant figure. I should change the option to 6.0 Ω to keep out of trouble with your teacher.
2	C	This is based on Ohm's law: $I = V/R$, that is, potential difference (V) and resistance (R) provided temperature and the type of wire doesn't change).
3	С	Ohm's law: $I = V/R$ relates potential difference (V) and current (I)
4	С	In general, metals are 'ohmic' which means they obey Ohm's law $I = V/R$. On pages 234-235 I describe different types of resistors. Just learn that nichrome and copper are ohmic, diodes are not. One thing people get confused about is when a plot of V/I doesn't give a straight line going through the origin (directly proportional that is). If you look at the graph for a torch bulb it has a curve and it is tempting to say it is 'non-ohmic'. This is not necessarily true as Ohm's law can only be tested when conditions such as temperature remain constant. A light bulb heats up as more current flows, so the line is not linear.
5	D	$R = \rho L/A$ where ρ 'rho' is the resistivity and varies with the type of material; L is length, and A is cross-sectional area. So Option (D) is correct as it captures all three variables.
Downloaded from seniorphysics com/nong		

Downloaded from seniorphysics.com/ncpq.

© Dr Richard Walding, 2021 (e: richard@walding.com)

Explanations for MCQ in Oxford University Press New Century Physics for Queensland Units 1 & 2 Student Book (Walding, 2019, 3rd ed). ISBN 9780190310158. Permission has been granted for this page to be distributed within an individual school only. OUP does not endorse material on this page.