

Chapter 7 Current, potential difference and energy flows. (Revision Questions page 225). Multiple Choice Answers

Q	Ans	Explanation
1	D	Free electrons are the outer shell electrons that can move anywhere as they are not strongly attached to any one atom. They are not free to leave the metal as that requires more energy.
2	A	The electrons drift from the negative terminal to the positive terminal. Any protons, atoms or ions stay in place.
3		$n = \frac{Q}{q_e}$ $Q = n \times q_e = 2 \times 10^7 \times 1.6 \times 10^{-19} \text{ C}$ $= 3.2 \times 10^{-12} \text{ C}$ $I = \frac{Q}{t} = \frac{3.2 \times 10^{-12}}{1 \times 10^{-6}} = 3.2 \times 10^{-6} \text{ A}$
4	D	This is shown in the formula: $I = \frac{q}{t}$
5	D	The charges don't move very quickly – they just drift along. The electric field however, propagates along the surface of the wire at light speed (as stated in Option C). I explain this on page 215.

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