

- 22** A battery causes a current of 3 A to flow through a metal wire of diameter 2.0 mm. The number density of the free electrons in the metal wire is  $8.5 \times 10^{28} \text{ m}^{-3}$ .

What is the average speed of the electrons drifting along the wire?

- A**  $2.0 \times 10^{-11} \text{ m s}^{-1}$     **B**  $2.0 \times 10^{-5} \text{ m s}^{-1}$     **C**  $7.0 \times 10^{-11} \text{ m s}^{-1}$     **D**  $7.0 \times 10^{-5} \text{ m s}^{-1}$