

- 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** $7.0 \times 10^{-5} \text{ m s}^{-1}$