

- 21** A 8.0 A current passes through a cylindrical copper wire with a diameter of 8.0 mm. The density of copper is  $8960 \text{ kg m}^{-3}$  and the mass of a single copper atom is  $10^{-25} \text{ kg}$ .

Assuming that there is one conduction electron for each copper atom, what is the drift velocity of the electrons in the wire?

- A**  $2.8 \times 10^{-6} \text{ m s}^{-1}$    **B**  $3.4 \times 10^{-6} \text{ m s}^{-1}$    **C**  $1.1 \times 10^{-5} \text{ m s}^{-1}$    **D**  $5.8 \times 10^{-5} \text{ m s}^{-1}$

