

- 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 kg m^{-3} and the mass of a single copper atom is 10^{-25} 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** $5.8 \times 10^{-5} \text{ m s}^{-1}$

