

**33** A wire has a length of 12 cm and contains a total of  $5.1 \times 10^{22}$  free electrons.

When a potential difference is applied across the ends of the wire, the free electrons move with an average drift speed of  $4.0 \times 10^{-6} \text{ ms}^{-1}$ .

What is the current in the wire?

**A** 0.0027 A

**B** 0.0039 A

**C** 0.27 A

**D** 0.39 A