

- 5 A copper wire has a cross-sectional area of  $5.0 \times 10^{-7} \text{ m}^2$ . There is a current in the wire of 0.93 A. Copper has  $8.4 \times 10^{28}$  conduction electrons per metre cubed.

Which of the following gives the magnitude of the drift velocity  $v$  in  $\text{ms}^{-1}$  for the conduction electrons in this wire?

☐ A  $v = \frac{0.93}{(8.4 \times 10^{28})(5.0 \times 10^{-7})}$

☐ B  $v = \frac{(8.4 \times 10^{28})(1.6 \times 10^{-19})(5.0 \times 10^{-7})}{0.93}$

☐ C  $v = \frac{(8.4 \times 10^{28})(5.0 \times 10^{-7})}{0.93}$

☐ D  $v = \frac{0.93}{(8.4 \times 10^{28})(1.6 \times 10^{-19})(5.0 \times 10^{-7})}$

(Total for Question 5 = 1 mark)