

- 30** Light of wavelength 450 nm is incident on a metal surface. The most energetic electrons ejected from the metal surface are undeflected as they pass through a region of mutually perpendicular magnetic and electric fields of strength  $2.0 \times 10^{-3}$  T and  $1400 \text{ V m}^{-1}$ , respectively.

What is the work function energy of the metal?

- A**  $2.2 \times 10^{-19}$  J      **B**  $4.4 \times 10^{-19}$  J      **C**  $6.6 \times 10^{-19}$  J      **D**  $8.8 \times 10^{-19}$  J

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