



- 4 An X-ray spectrum is shown in Fig. 4.1.

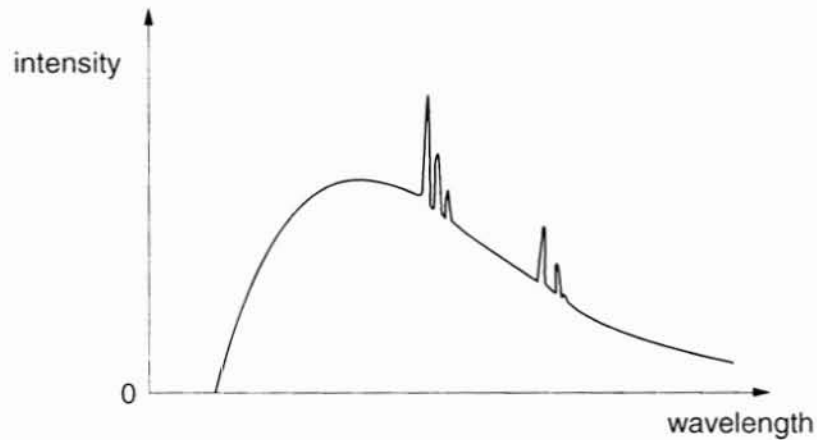


Fig. 4.1

- (a) Explain why there is a minimum wavelength for the emitted X-rays.

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..... [3]

- (b) A characteristic X-ray wavelength using a copper target is  $1.54 \times 10^{-10} \text{ m}$ . Calculate the energy change giving rise to this wavelength.

energy = ..... J [2]