7 Nuclei of an isotope of copper (Cu) each have 29 protons and 37 neutrons. This isotope is a β^- emitter.

(a) State the nuclide notation in the form ${}^{A}_{Z}X$ for this nucleus of copper.

[1]

(b) The energy spectrum of the β^- radiation emitted by a sample of this isotope is shown in Fig. 7.1.

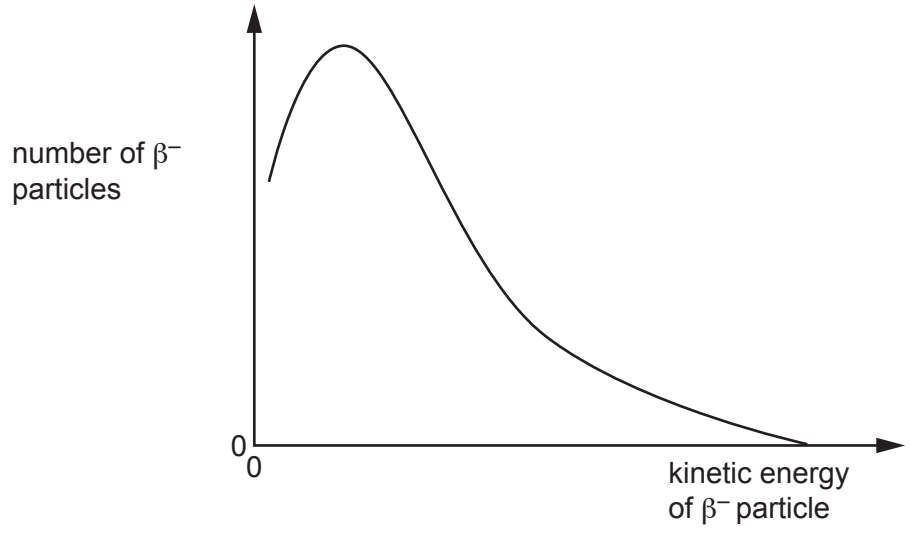

Fig. 7.1

(i) Use Fig. 7.1 to explain why other particles apart from the β^- particles must be emitted during this decay.

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.....

.....

.....

..... [3]

(ii) State the name of the other particle emitted during the decay of this isotope.

..... [1]

(iii) The copper isotope decays to an isotope of zinc (Zn).

Give the radioactive decay equation for this decay. Include the nucleon and proton numbers of **all** the particles involved.

[3]

[Total: 8]