

- 8 (a) The variation with nucleon number  $A$  of the binding energy per nucleon  $B_E$  of nuclei is shown in Fig. 8.1.

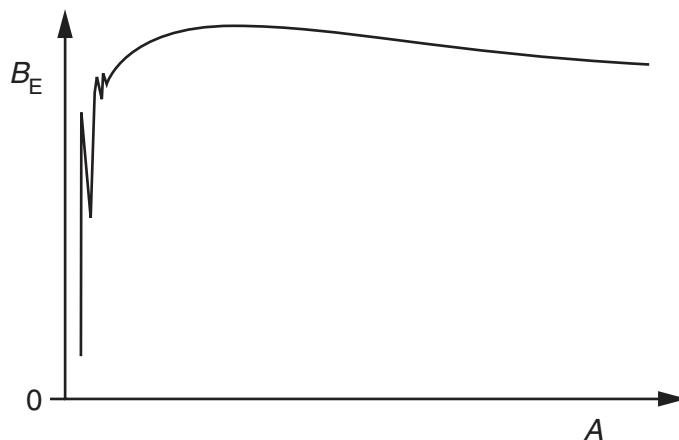


Fig. 8.1

On Fig. 8.1, mark the approximate positions of

- (i) iron-56 (label this point Fe), [1]  
(ii) zirconium-97 (label this point Zr), [1]  
(iii) hydrogen-2 (label this point H). [1]
- (b) (i) State what is meant by *nuclear fission*.

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[2]

- (ii) By reference to Fig. 8.1, explain how fission is energetically possible.

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**Please turn over for Section B.**