

7 (a) β -radiation is emitted during the spontaneous radioactive decay of an unstable nucleus.

(i) State the nature of a β -radiation.

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.. [1]

(ii) State two properties of β -radiation.

1.

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2.

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(iii) Explain the meaning of *spontaneous* radioactive decay.

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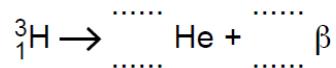
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.. [1]

(b) The following equation represents the decay of a nucleus of hydrogen-3 by the emission of β radiation.

Complete the equation.



[1]

- (c) The β -particle is emitted with an energy of 5.7×10^3 eV.

Calculate the speed of the β -particle.

$$\text{speed} = \dots \text{m s}^{-1}$$

[Total: 7]