

- 7 A stationary nucleus X decays to form nucleus Y, as shown by the equation



(a) In the above equation, draw a circle around all symbols that represent a lepton. [1]

(b) State the name of the particle represented by the symbol $\bar{\nu}$.

..... [1]

(c) Energy is released during the decay process. State the form of the energy that is gained by nucleus Y.

..... [1]

(d) By comparing the compositions of X and Y, state and explain whether they are isotopes.

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(e) The quark composition of one nucleon in X is changed during the emission of a β^- particle. Describe this change to the quark composition.

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..... [1]

[Total: 6]

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