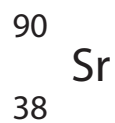


7 An unstable isotope of strontium has a half-life of 28.8 years.

It is a beta emitter and can be represented by this symbol.



(a) (i) What is the mass number of this isotope?

(1)

(ii) Explain the meaning of the term **half-life**.

(2)

(iii) A person can absorb strontium atoms, which stay in their bones.

Explain why strontium-90 in the bones is a serious health hazard.

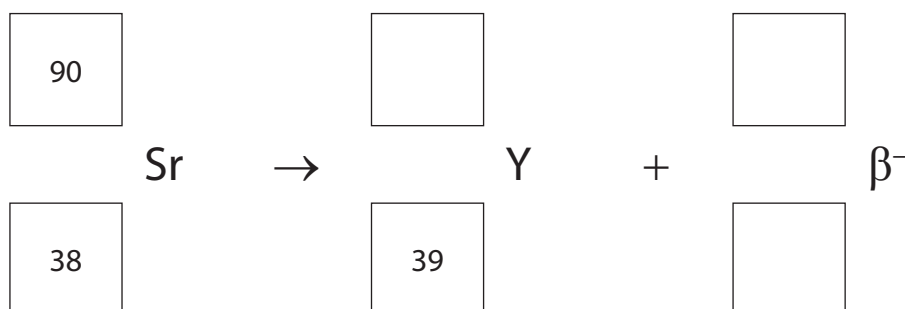
(2)



(b) When a strontium-90 nucleus emits a beta particle, it decays to form yttrium-90.

(i) Complete the equation for this decay.

(2)



(ii) Yttrium-90 is also an unstable isotope.

Explain why strontium-90 and yttrium-90 can both be described as isotopes, even though they have different numbers of protons.

(2)

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(Total for Question 7 = 9 marks)

