

10 When a neutron collides with a uranium-235 nucleus, nuclear fission can occur.

The equation represents this fission process.



(a) (i) What is meant by the term **fission**?

(1)

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(ii) Calculate the number of neutrons released during this fission reaction.

(2)

number of neutrons released =

(iii) Explain how a chain reaction can occur in uranium-235.

(2)

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(iv) With reference to the equation, explain what is meant by a daughter nucleus.

(2)

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(b) Barium-144 is a radioactive isotope that emits beta particles.

Explain what happens to the mass (nucleon) number of barium-144 when it emits a beta particle.

(2)

(Total for Question 10 = 9 marks)

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