

1 The total number of free neutrons immediately after a fission reaction

- A goes down.
- B goes up.
- C may increase or decrease.
- D must stay constant.

(Total for Question 1 mark)

2 Which of the following statements about nuclear fission is correct?

- A A uranium-235 nucleus can only undergo fission after absorbing a proton.
- B Kinetic energy is conserved during fission.
- C Linear momentum is not conserved during fission.
- D The fission fragments have a total mass less than that of the nucleus just before fission.

(Total for Question 1 mark)

3 The fuel used in a nuclear fission reactor is uranium.
Which of the following is required for fission to proceed?

- A Neutrons must be removed from the reactor core.
- B The reactor core must be very hot.
- C The uranium nuclei must absorb neutrons.
- D The uranium nuclei must absorb protons.

(Total for Question = 1 mark)

4 Fission and fusion are both nuclear processes

Which of the following statements is correct for both processes?

- A Neutrons are released.
- B No harmful radiation is produced.
- C The binding energy per nucleon increases.
- D The total mass increases.

(Total for Question = 1 mark)

5 A number of conditions must be met if the fusion of hydrogen nuclei is to occur. Which condition, in a sample of hydrogen, is **not** necessary for nuclear fusion to occur?

- A very high density
- B very high mass
- C very high pressure
- D very high temperature

(Total for Question 3 = 1 mark)