

Nuclear Fission & Fusion *(Physics only)*

Nuclear fission

Draw the reaction — label the particles in the diagram

space for diagram

Describe the process of nuclear fission

Key words to use ☐ slow-moving neutron ☐ large nucleus ☐ 2 smaller nuclei ☐ 2 or 3 neutrons ☐ gamma radiation

Chain reaction

Draw a chain reaction diagram

space for diagram

Key words to use

- ☐ neutron absorbed
☐ uranium splits into 2 smaller nuclei
☐ fission
☐ neutrons released
☐ cause further fission events

Nuclear fusion

Draw the reaction — label the particles in the diagram

space for diagram

Describe the process of nuclear fusion

Key words to use ☐ nuclei ☐ join ☐ nucleus ☐ mass ☐ transferred ☐ energy ☐ radiation

Exam-style question

[6 marks]

A nuclear power station uses **uranium-235** as its fuel.

(a) Name the particle that must be **absorbed** by a uranium-235 nucleus for fission to occur. (1)

(b) Describe what is **released** when a uranium-235 nucleus undergoes fission. (3)

(c) In a reactor, **control rods** are lowered into the core. **Control rods absorb neutrons**. Explain how this stops the chain reaction running out of control. (2)