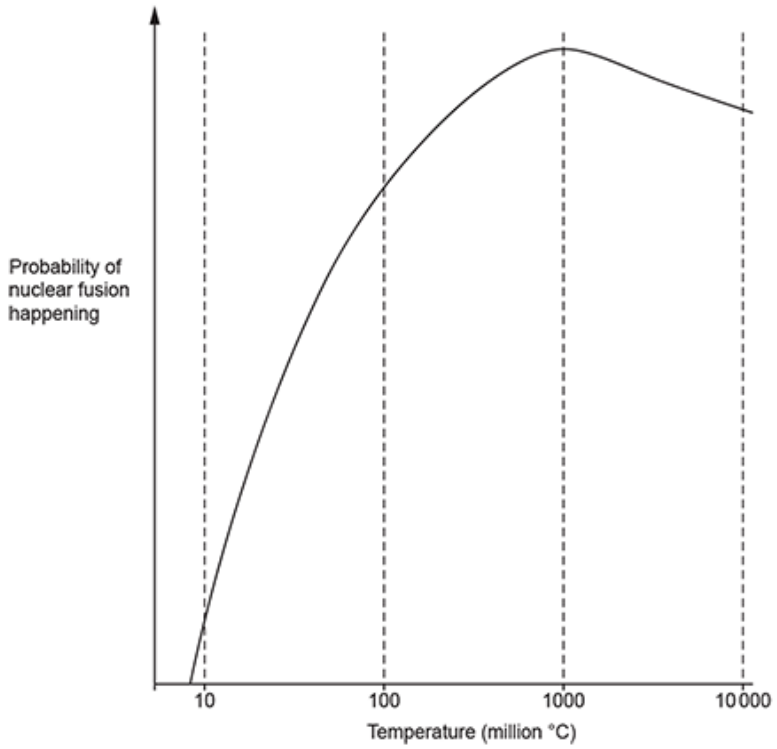
1. Nuclear power stations use nuclear fission rather than nuclear fusion to generate energy.

This graph shows how the probability of a nuclear fusion reaction changes with temperature.



Compare the processes of fission and fusion.

Explain why power stations only use nuclear fission at present.

Use the graph, and your scientific knowledge.

[6]

2. A radioactive element emits gamma rays.

A teacher accidentally spills some of the radioactive element on their hands.

Which sentence describes what happens to the teacher?

A They are contaminated and irradiated.
B They are contaminated only.
C They are irradiated only.
D They are not contaminated and not irradiated.

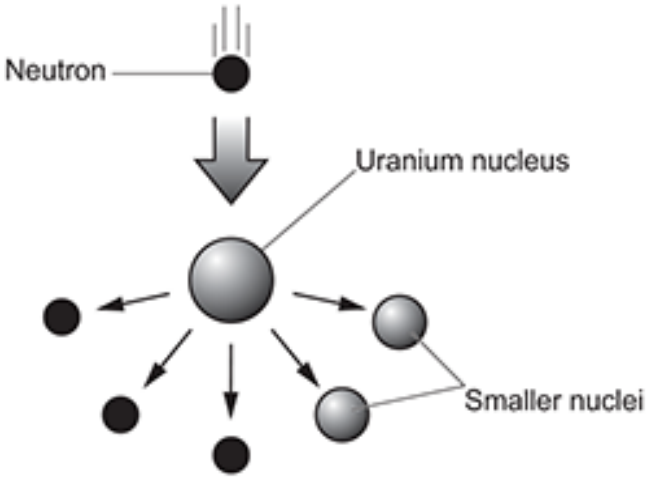
Your answer ☐ **[1]**

3. A student models nuclear fission using this process:

Step 1

- A uranium nucleus absorbs one neutron.
- The uranium nucleus splits releasing **three** neutrons.

The diagram shows what happens in **step 1** of this process.



The three neutrons can each repeat this process again for step 2 and step 3. How many neutrons will be released after step 3?

A 6
B 9
C 18
D 27

Your answer ☐ **[1]**

END OF QUESTION PAPER