Fission and Fusion

Question paper

Level	IGCSE(9-1)
Subject	Physics
Exam Board	Edexcel IGCSE
Module	Double Award (Paper 1P)
Topic	Radioactivity and Particles
Sub-Topic	Fission and Fusion
Booklet	Question paper

Time Allowed: **23 minutes**

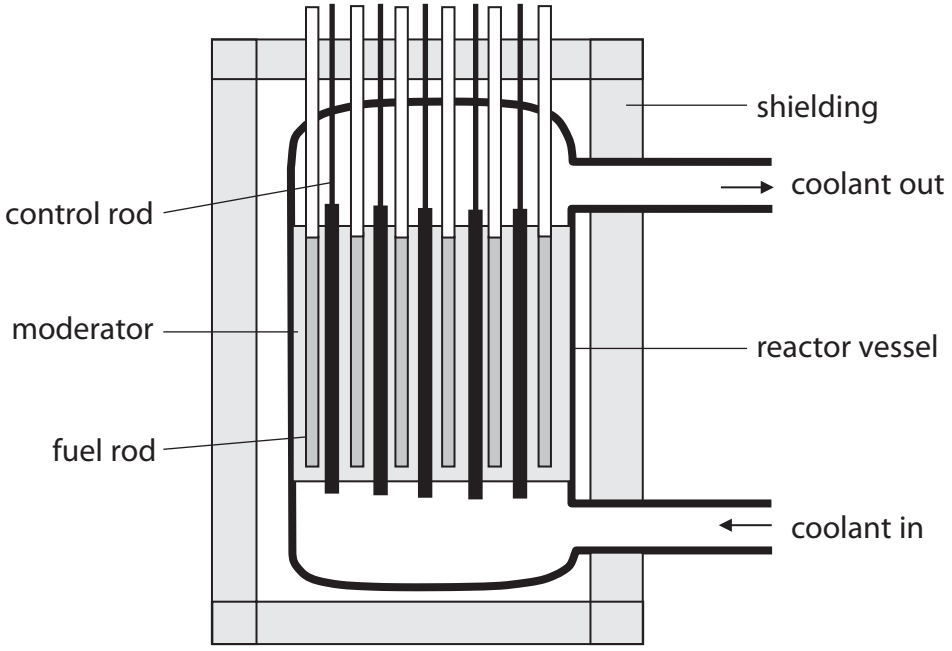
Score: **/19**

Percentage: **/100**

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	'75%	70%	60%	55%	50%	<50%

1 The diagram shows the main parts of a nuclear reactor.



(a) Draw a line linking each part of the reactor with its main function.

The first one has been done for you.

(2)

part of reactor	**main function**
control rod	controls the rate of fission
coolant	absorbs dangerous radiation
fuel rod	contains uranium for fission
shielding	removes energy from the reactor

(b) State the type of energy released in a fission reaction.

(1)

(c) Explain the role of the moderator in a fission reaction.

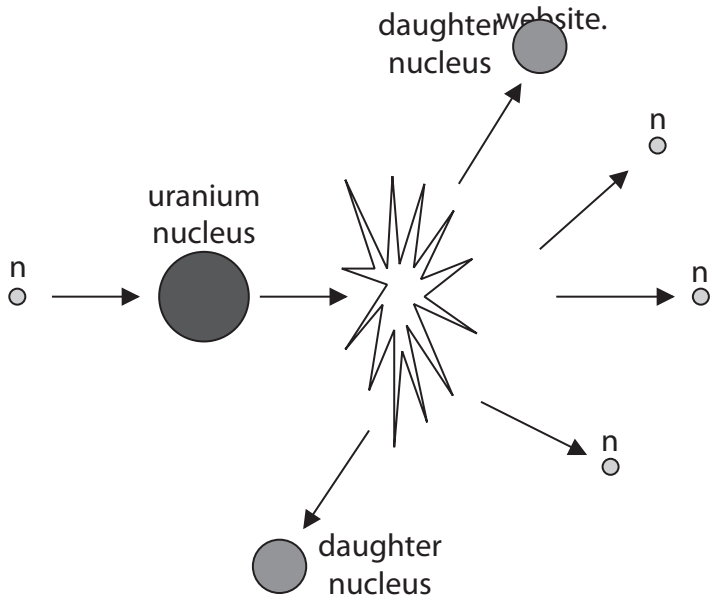
(2)

(d) Explain, in terms of neutrons, what is meant by controlled nuclear fission.

(3)

(Total for Question 1 = 8 marks)

2 A student finds this representation of nuclear fission on a website.



(a) Describe what happens when nuclear fission of uranium occurs.

(3)

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(b) The daughter nuclei move off with high speed.

Name the type of energy that this gives them.

(1)

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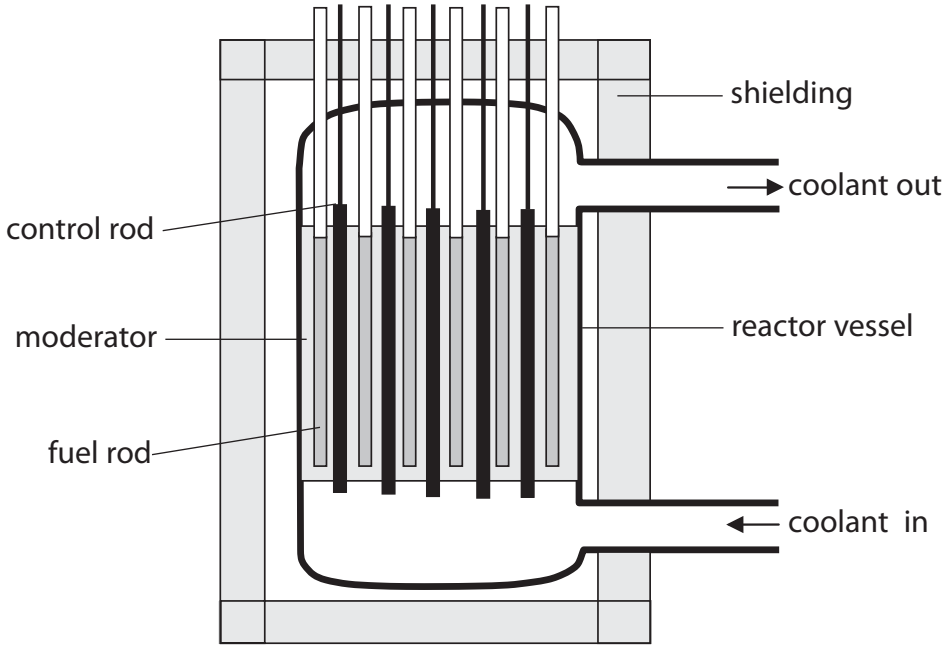
(Total for Question 2 = 4 Marks)

3 The diagram shows the main parts of a nuclear reactor.

In the nuclear reactor uranium-235 nuclei undergo fission in a controlled chain reaction.



(a) Describe nuclear fission and how the chain reaction is controlled.

Use terms from the diagram to help you.

(5)

(b) State the form of energy that is released during fission.

(1)

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(c) How does the shielding improve safety?

(1)

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(Total for Question 3 = 7 marks)