FREE REVISION PACK

Fission & Fusion

Pearson Edexcel International Advanced Level Physics · Unit 5 (WPH15) · Specification points 135–136

Easy | Multiple choice · past-paper questions

4	4	≈ 5 min
QUESTIONS	TOTAL MARKS	SUGGESTED TIME*

Contents

Q	LEVEL	FOCUS	SOURCE	MARKS
1	Easy	Conditions for fusion in stars	Edexcel IAL October 2023 · Unit 5 · Q1	1 mark
2	Easy	Conditions for sustained fusion in a star's core	Edexcel IAL June 2022 · Unit 5 · Q5	1 mark
3	Easy	What fission and fusion have in common	Edexcel IAL October 2022 · Unit 5 · Q1	1 mark
4	Easy	Why fusion happens mainly in the Sun's core	Edexcel IAL June 2021 · Unit 5 · Q4	1 mark

Key ideas to have ready

- Fusion needs very high temperature (to overcome repulsion) and very high density (for frequent collisions).
- In stars, fusion happens mainly in the core, where it is hottest.
- Both fission and fusion increase binding energy per nucleon.
- Fission does not need high temperatures; neither process is free of radiation.

How to use this pack

1. The questions are grouped into levels (Easy). Work through them in order, and check your answers at the end of each level before moving on.
2. Every question is multiple choice with one correct answer. Write down your working anyway; that is how you find mistakes.
3. The separate mark scheme uses the same numbers and explains every answer.

Levels are based on how students did in Pearson's examiner reports where that information exists, plus our own difficulty rating. *About 1.5 minutes per question.

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Easy

Definitions and one-step ideas. Most students get these right.

Questions 1–4

Choose **one** answer for each question and put a cross in the box next to it.

Edexcel IAL October 2023 · Unit 5 · Q1

1 Fusion reactions are the primary energy source of stars.

Which row of the table gives the conditions necessary for fusion in stars?

	Density	Temperature
☒ **A**	high	high
☒ **B**	high	low
☒ **C**	low	high
☒ **D**	low	low

Edexcel IAL June 2022 · Unit 5 · Q5

2 Which row of the table gives the conditions required in the core of a star for fusion to be sustained?

	Density	Temperature
☒ **A**	moderate	moderate
☒ **B**	moderate	very high
☒ **C**	very high	moderate
☒ **D**	very high	very high

Edexcel IAL October 2022 · Unit 5 · Q1

3 Fission and fusion are both nuclear processes.

Which of the following statements is correct for both processes?

☒ **A** No harmful radiation is produced.

☒ **B** Nuclear binding energy increases.

☒ **C** Very high temperatures are required.

☒ **D** The process can occur spontaneously.

Edexcel IAL June 2021 · Unit 5 · Q4

4 In the Sun, nuclear fusion occurs mainly in the core.

Which of the following is a reason for this?

☒ **A** Helium nuclei surround the core.

☒ **B** Most of the Sun's hydrogen is in the core.

☒ **C** The core contains most of the mass of the Sun.

☒ **D** The temperature is greatest in the core.

End of questions. Check your answers with the matching mark scheme. More free packs and 1-to-1 tuition: **www.getbetteratphysics.co.uk**