FREE REVISION PACK

Nuclear Notation & Isotopes

Pearson Edexcel International Advanced Level Physics · Unit 4 (WPH14) · Specification points 111

Easy | Multiple choice · past-paper questions

5	5	≈ 10 min
QUESTIONS	TOTAL MARKS	SUGGESTED TIME*

Contents

Q	LEVEL	FOCUS	SOURCE	MARKS
1	Easy	Number of neutrons from nuclear notation	Edexcel IAL January 2024 · Unit 4 · Q1	1 mark
2	Easy	Writing an isotope in nuclear notation	Edexcel IAL October 2023 · Unit 4 · Q1	1 mark
3	Easy	Nucleons and neutrons in oxygen-17	Edexcel IAL January 2022 · Unit 4 · Q1	1 mark
4	Easy	Protons and neutrons from nuclear notation	Edexcel IAL June 2025 · Unit 4 · Q1	1 mark
5	Easy	Protons and neutrons in oganesson-294	Edexcel IAL January 2021 · Unit 4 · Q3	1 mark

Key ideas to have ready

- ${}^{A}_{Z}X$: A = nucleon number (top), Z = proton number (bottom).
- Number of neutrons = A − Z.
- Isotopes have the same Z but different numbers of neutrons.
- A neutral atom has Z electrons.

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 1–5

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

Edexcel IAL January 2024 · Unit 4 · Q1

1 Which of the following is the number of neutrons in a nucleus of $^{121}_{51}\text{Sb}$?

- ☒ **A** 51
- ☒ **B** 70
- ☒ **C** 121
- ☒ **D** 172

Edexcel IAL October 2023 · Unit 4 · Q1

2 The nucleus of an isotope of osmium (Os) contains 76 protons and 190 neutrons.

Which of the following can be used to represent this isotope?

- ☒ **A** $^{266}_{76}\text{Os}$
- ☒ **B** $^{190}_{76}\text{Os}$
- ☒ **C** $^{76}_{190}\text{Os}$
- ☒ **D** $^{76}_{266}\text{Os}$

Edexcel IAL January 2022 · Unit 4 · Q1

3 $^{17}_{8}\text{O}$ is an isotope of oxygen.

Which row of the table gives the number of nucleons and the number of neutrons in an atom of $^{17}_{8}\text{O}$?

	Number of nucleons	Number of neutrons
☒ **A**	8	8
☒ **B**	8	9
☒ **C**	17	8
☒ **D**	17	9

Edexcel IAL June 2025 · Unit 4 · Q1

4 An isotope of astatine has the symbol $^{213}_{85}\text{At}$.

Which row of the table shows the number of protons and the number of neutrons in a nucleus of this isotope?

	Protons	Neutrons
☒ **A**	213	85
☒ **B**	85	128
☒ **C**	213	128
☒ **D**	85	213

Edexcel IAL January 2021 · Unit 4 · Q3

5 In 2016 the element oganesson was added to the periodic table.

One isotope of oganesson has the symbol $^{294}_{118}\text{Og}$.

Which row of the table shows the number of protons and the number of neutrons in a nucleus of this isotope of oganesson?

	Number of protons	Number of neutrons
☒ **A**	118	176
☒ **B**	118	294
☒ **C**	176	294
☒ **D**	294	118

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