GET BETTER AT PHYSICS · MARK SCHEME

Decay Equations: tiered multiple choice

Edexcel IAL Physics · Unit 5 (WPH15) · Specification points 139 · 4 questions · 4 marks

1 mark per correct letter | Worked reasoning for every question

How students did = from Pearson examiner reports, where available

Answer key

Q1	Q2	Q3	Q4
A	B	B	A

Easy

Questions 1–4

1 **A**

β^+ decay of carbon-11 · Edexcel IAL October 2025 · Unit 4 · Q7

In β^+ decay a proton becomes a neutron and a positron is emitted. The proton number falls by 1 (6 → 5) and the nucleon number stays the same (11).

2 **B**

β^+ decay of potassium-38 · Edexcel IAL June 2023 · Unit 4 · Q3

β^+ emission turns a proton into a neutron: the proton number decreases by 1 (19 → 18) and the nucleon number is unchanged (38).

3 **B**

Finding the parent nucleus of an alpha decay · Edexcel IAL January 2023 · Unit 4 · Q3

Add the alpha particle back on: nucleon number 233 + 4 = 237 and proton number 91 + 2 = 93. Neutrons = 237 − 93 = 144. So X has 93 protons and 144 neutrons.

How students did: 60% of students got this right in January 2023.

4 **A**

Products of alpha decay · Edexcel IAL October 2024 · Unit 4 · Q4

An alpha particle takes away 2 protons and 2 neutrons. Radon-222 has 86 protons and 136 neutrons, so the product has 84 protons and 134 neutrons (218 nucleons).

How students did: 59% of students got this right in October 2024.

End of mark scheme. Answers from Pearson's published mark schemes; explanations written for this pack. Pearson Edexcel material is © Pearson Education Ltd. More free packs and 1-to-1 tuition: **www.getbetteratphysics.co.uk**

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