GET BETTER AT PHYSICS · MARK SCHEME

Projectile Motion: tiered multiple choice

Edexcel IAL Physics · Unit 1 (WPH11) · Specification points 7 · 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
B	B	C	B

Easy

Questions 1–4

1 **B**

Horizontal distance of a projectile · Edexcel IAL June 2019 · Unit 1 · Q4

With no air resistance the horizontal velocity stays at 1.2 m s^{-1} throughout the fall. Horizontal distance = 1.2 × 0.9 m. The vertical motion (½gt^2) decides the time but not the horizontal distance.

How students did: 62% of students got this right in June 2019. The most common wrong answer was D.

2 **B**

Time to fall from a table · Edexcel IAL June 2025 · Unit 1 · Q3

The time to reach the floor depends only on the vertical motion: the ball starts with zero vertical velocity and falls the same height with acceleration g. Mass and horizontal speed make no difference, so the time is still t.

3 **C**

Velocity components of a projectile · Edexcel IAL October 2025 · Unit 1 (alternative paper) · Q6

With no air resistance there is no horizontal force, so the horizontal velocity is constant: the initial and final horizontal velocities are equal. At maximum height the vertical velocity is zero (a minimum in size, not a maximum). It lands lower than it started, so its final vertical speed is larger than its initial vertical speed.

4 **B**

Two objects falling in a vacuum · Edexcel IAL June 2021 · Unit 1 · Q7

Both objects have the same acceleration (g), the same increase in speed and, by energy conservation from the same height and starting speed, the same final speed and kinetic energy. But one falls straight down and the other moves at an angle, so their velocities at the floor point in different directions: velocity is a vector, so the velocities differ.

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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