GET BETTER AT PHYSICS · MARK SCHEME

Drag & Terminal Velocity: tiered multiple choice

Edexcel IAL Physics · Unit 1 (WPH11) · Specification points 25 (part) · 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
D	B	C	A

Easy

Questions 1–4

1 **D**

Forces on a balloon rising at terminal velocity · Edexcel IAL October 2025 · Unit 1 · Q5

At terminal velocity the resultant force is zero. Moving upwards, the drag acts downwards, along with the weight. So U = W + D, which means U > W.

Watch out: Drag always opposes the motion: here that is downwards.

2 **B**

Upthrust and drag on a sinking sphere · Edexcel IAL June 2022 · Unit 1 · Q2

Upthrust equals the weight of liquid displaced. The sphere is fully submerged, so the volume displaced, and hence the upthrust, is constant. Viscous drag increases with speed, so as the sphere speeds up the drag increases.

3 **C**

Coin and feather falling through air · Edexcel IAL January 2025 · Unit 1 · Q2

At the moment of release neither is moving, so there is no air resistance yet and both have initial acceleration g. Air resistance then affects the feather much more relative to its weight, so the coin reaches the ground first.

4 **A**

Why a falling object's acceleration decreases · Edexcel IAL January 2020 · Unit 1 · Q10

The gradient of a velocity–time graph is the acceleration. As the object speeds up, the drag force increases, so the resultant force (weight − upthrust − drag) decreases and so does the acceleration. Weight and upthrust stay constant.

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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