GET BETTER AT PHYSICS · MARK SCHEME

Newton's Laws of Motion: tiered multiple choice

Edexcel IAL Physics · Unit 1 (WPH11) · Specification points 8–10, 12 · 5 questions · 5 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	Q5
D	C	C	C	C

Easy

Questions 1–4

1 **D**

What is always true of a third-law pair · Edexcel IAL October 2025 · Unit 1 · Q3

The two forces in a Newton's third law pair are always equal in magnitude and opposite in direction, and act on different objects. They need not cause acceleration (for example, a book resting on a table).

2 **C**

Newton's second law in an accelerating lift · Edexcel IAL June 2019 · Unit 1 · Q10

The floor pushes up on the student with 800 N (Newton's third law). The forces on the student are 800 N up and weight 70g down. Resultant force = ma: 800 − 70g = 70a.

How students did: 61% of students got this right in June 2019. The most common wrong answer was B.

3 **C**

Drag on an object accelerating upwards · Edexcel IAL January 2025 · Unit 1 · Q9

Taking upwards as positive: resultant force = upthrust − weight − drag = ma. So 90 − 49 − D = 5 × 4, giving D = 90 − 49 − (5 × 4).

Watch out: The drag acts downwards here because the object is moving upwards.

4 **C**

Newton's third law pair on a table · Edexcel IAL October 2019 · Unit 1 · Q7

A Newton's third law pair is two forces of the same type acting on different objects. The cube pushes on the table (R_c) and the table pushes on the cube (R_t), so $R_c = R_t$. A and B are equilibrium conditions for the table (Newton's first law), not third-law pairs.

Watch out: Balanced forces on one object are not a Newton's third law pair.

How students did: 55% of students got this right in October 2019.

Hard

Question 5

5 **C**

Motion of a rocket in orbit with engines off · Edexcel IAL June 2019 · Unit 1 · Q2

Even with the engines off, the Earth's gravitational pull acts on the rocket, so there is a resultant force. By Newton's second law the rocket accelerates: its velocity keeps changing direction as it orbits.

> **Watch out:** A and B describe uniform motion, which needs zero resultant force (Newton's first law). Gravity has not switched off in orbit.

How students did: 25% of students got this right in June 2019. The most common wrong answer was A; A and B describe uniform motion (Newton's first law).

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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