FREE REVISION PACK

Momentum & Its Conservation

Pearson Edexcel International Advanced Level Physics · Unit 1 (WPH11) · Specification points 13–14

Easy | Multiple choice · past-paper questions

5	5	≈ 10 min
QUESTIONS	TOTAL MARKS	SUGGESTED TIME*

Contents

Q	LEVEL	FOCUS	SOURCE	MARKS
1	Easy	Total momentum of two colliding objects	Edexcel IAL January 2021 · Unit 1 · Q6	1 mark
2	Easy	Momentum after a collision	Edexcel IAL June 2025 · Unit 1 · Q10	1 mark
3	Easy	Momentum gained by falling objects	Edexcel IAL October 2025 · Unit 1 · Q10	1 mark
4	Easy	Momentum transferred by a bat	Edexcel IAL October 2024 · Unit 1 · Q8	1 mark
5	Easy	Trolleys that collide and stick	Edexcel IAL January 2020 · Unit 1 · Q7	1 mark

Key ideas to have ready

- Momentum $p = mv$, a vector (kg m s^{-1} or N s).
- In a collision or explosion with no external force, total momentum is conserved.
- Choose a positive direction; velocities the other way are negative.
- Force = rate of change of momentum: $\Delta p = F\Delta t$.

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 2021 · Unit 1 · Q6

1 Two objects are travelling directly towards each other and then collide. Object A is a mass of 2 kg initially travelling to the right at 3 ms^{-1} and object B is a mass of 5 kg initially travelling to the left at 2 ms^{-1}.

What is the total momentum of A and B after the collision?

- ☒ **A** 4 $kgms^{-1}$ to the left
- ☒ **B** 4 $kgms^{-1}$ to the right
- ☒ **C** 16 $kgms^{-1}$ to the left
- ☒ **D** 16 $kgms^{-1}$ to the right

Edexcel IAL June 2025 · Unit 1 · Q10

2 A toy train of mass $3m$ is moving with a speed v.
A toy truck of mass m is moving with a speed $2v$ in the opposite direction, as shown.



The train and truck collide and move off together.

Which of the following expressions gives the new speed of the train and truck?

- ☒ **A** $\frac{v}{4}$
- ☒ **B** $\frac{4v}{5}$
- ☒ **C** v
- ☒ **D** $\frac{5v}{4}$

Edexcel IAL October 2025 · Unit 1 · Q10

3 Two objects, R and S, are falling vertically and accelerating due to gravity.
Air resistance is negligible.

R has mass m and S has mass $2m$.

Initially, each object has momentum p.

After time t object R has momentum $2p$.

Which of the following gives the momentum of object S after time t?

- ☒ **A** $2p$
- ☒ **B** $3p$
- ☒ **C** $4p$
- ☒ **D** $5p$

Edexcel IAL October 2024 · Unit 1 · Q8

4 A student uses a wooden bat to hit a stationary ball of mass m.

As the bat hits the ball, the momentum of the bat decreases by Δp.
The ball then moves with velocity v.

The student then uses the bat to hit a stationary ball of mass $3m$.
The momentum of the bat decreases by $2\Delta p$.

Which of the following expressions gives the velocity of the ball of mass $3m$ after being hit?

☒ **A** $\frac{1}{6}v$

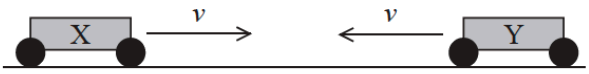
☒ **B** $\frac{2}{3}v$

☒ **C** $\frac{3}{2}v$

☒ **D** $6v$

Edexcel IAL January 2020 · Unit 1 · Q7

5 Trolleys X and Y of masses m and $3m$ respectively are travelling at the same speed towards each other. The trolleys collide and move off together.



Which of the following statements is correct?

☒ **A** The force of X on Y during the collision is greater than the force of Y on X.

☒ **B** The force of X on Y during the collision is less than the force of Y on X.

☒ **C** The speed of X after the collision is greater than v.

☒ **D** The speed of X after the collision is less than v.

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