FREE REVISION PACK

Moments & Centre of Gravity

Pearson Edexcel International Advanced Level Physics · Unit 1 (WPH11) · Specification points 15–16

Easy | Multiple choice · past-paper questions

5	5	≈ 10 min
QUESTIONS	TOTAL MARKS	SUGGESTED TIME*

Contents

Q	LEVEL	FOCUS	SOURCE	MARKS
1	Easy	Definition of centre of gravity	Edexcel IAL June 2024 · Unit 1 · Q7	1 mark
2	Easy	Where forces act on a free-body diagram	Edexcel IAL October 2019 · Unit 1 · Q6	1 mark
3	Easy	See-saw in balance	Edexcel IAL June 2025 · Unit 1 · Q2	1 mark
4	Easy	Principle of moments on a plank	Edexcel IAL October 2024 · Unit 1 · Q10	1 mark
5	Easy	Comparing support forces on a beam	Edexcel IAL January 2022 · Unit 1 · Q9	1 mark

Key ideas to have ready

- Moment = force × perpendicular distance from the pivot (N m).
- Principle of moments: in equilibrium, total clockwise moment = total anticlockwise moment about any point.
- For equilibrium you also need the resultant force to be zero.
- The centre of gravity is the point where the whole weight may be considered to act.

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.

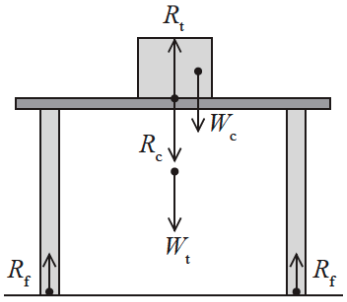
Edexcel IAL June 2024 · Unit 1 · Q7

1 Which of the following describes the centre of gravity of an object?

- ☒ **A** the point where the mass of the object is located
- ☒ **B** the point where the mass of the object is concentrated
- ☒ **C** the point where the weight of the object is located
- ☒ **D** the point where the weight of the object may be considered to act

Edexcel IAL October 2019 · Unit 1 · Q6

2 A uniform solid cube is placed on a table. The diagram shows the forces acting on the table and on the cube.



R_c = reaction force of cube on table
R_f = reaction force of floor on table
R_t = reaction force of table on cube
W_c = weight of cube
W_t = weight of table

The dot at the start of every arrowed line indicates the point at which the force can be considered to act.

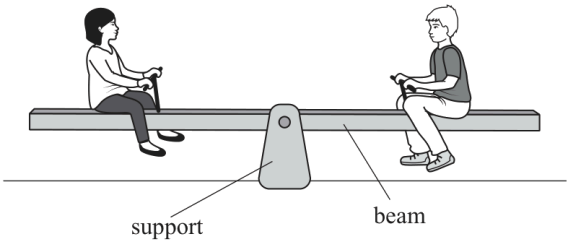
Which of the following forces has been drawn in the wrong position?

- ☒ **A** R_c
- ☒ **B** R_t
- ☒ **C** W_c
- ☒ **D** W_t

Edexcel IAL June 2025 · Unit 1 · Q2

3 A see-saw is a uniform beam that balances on a support. The beam can rotate around the top of the support.

Two children of equal weight sit on a see-saw at equal distances from the support, as shown.



Which row of the table describes the resultant force and resultant moment on the beam?

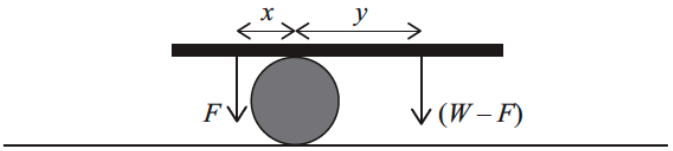
	Resultant force	Resultant moment
☒ **A**	zero	zero
☒ **B**	zero	anticlockwise
☒ **C**	downwards	zero
☒ **D**	downwards	anticlockwise

Edexcel IAL October 2024 · Unit 1 · Q10

4 A student puts a piece of wood on top of a cylinder. He stands on the wood with his feet at distances x and y from the cylinder.

The weight of the student is W.

The diagram shows the force of each foot acting on the wood.



The wood is horizontal and in equilibrium.

The weight of the wood is negligible.

Which of the following expressions is equal to W?

☒ **A** $\frac{Fx}{y} + F$

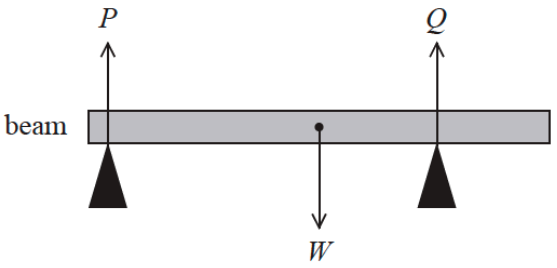
☒ **B** $\frac{Fx}{y} - F$

☒ **C** $\frac{Fy}{x} + F$

☒ **D** $\frac{Fy}{x} - F$

Edexcel IAL January 2022 · Unit 1 · Q9

5 A beam is balanced on two supports as shown.



The beam has a weight W and the reaction forces at the two supports are P and Q.

Which of the following statements about the magnitudes of the forces is correct?

☒ **A** $P > Q$

☒ **B** $Q > W$

☒ **C** $Q > P$

☒ **D** $(P + Q) > W$

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