FREE REVISION PACK

Superposition & Stationary Waves

Pearson Edexcel International Advanced Level Physics · Unit 2 (WPH12) · Specification points 41–43

Easy | Medium | Multiple choice · past-paper questions

5	5	≈ 10 min
QUESTIONS	TOTAL MARKS	SUGGESTED TIME*

Contents

Q	LEVEL	FOCUS	SOURCE	MARKS
1	Easy	Wavelength of a stationary wave	Edexcel IAL October 2023 · Unit 2 · Q6	1 mark
2	Easy	Properties of stationary waves	Edexcel IAL January 2023 · Unit 2 · Q10	1 mark
3	Easy	Superposition of two waves on a string	Edexcel IAL January 2025 · Unit 2 · Q4	1 mark
4	Easy	Phase and amplitude of two points on a stationary wave	Edexcel IAL January 2025 · Unit 2 · Q7	1 mark
5	Medium	Phase in a stationary wave	Edexcel IAL January 2022 · Unit 2 · Q7	1 mark

Key ideas to have ready

- Superposition: where waves meet, the displacements add.
- A stationary wave forms from two waves of the same frequency travelling in opposite directions.
- Adjacent nodes (or antinodes) are $\lambda/2$ apart.
- Points between neighbouring nodes are in phase; points in adjacent loops are in antiphase.

How to use this pack

1. The questions are grouped into levels (Easy and Medium). 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

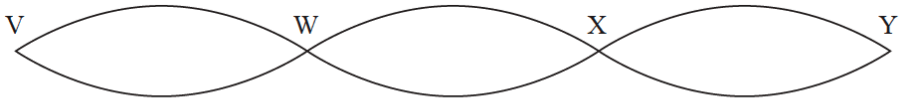
Definitions and one-step ideas. Most students get these right.

Questions 1–4

Choose **one** answer for each question and put a cross in the box next to it.

1

Edexcel IAL October 2023 · Unit 2 · Q6



The length of the string VY is 0.6 m.

Which of the following is the wavelength of the standing wave?

☒ **A** 0.2 m

☒ **B** 0.4 m

☒ **C** 0.6 m

☒ **D** 0.9 m

Edexcel IAL January 2023 · Unit 2 · Q10

2

Which of the following is **not** a correct statement about stationary waves?

☒ **A** All points between two adjacent nodes are in phase.

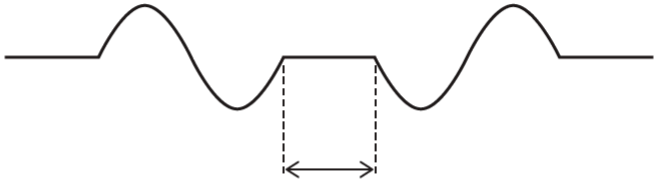
☒ **B** Antinodes are points of maximum amplitude.

☒ **C** The distance between adjacent nodes is equal to one wavelength.

☒ **D** The net energy transfer along a stationary wave is zero.

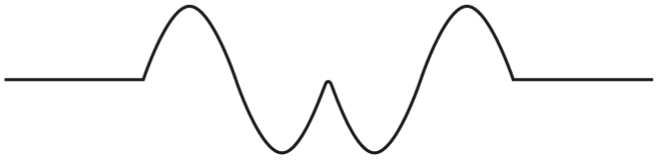
Edexcel IAL January 2025 · Unit 2 · Q4

3 Two waves on a string move towards each other at the same speed. Both waves have the same wavelength.
The diagram shows the string when the waves are half a wavelength apart.

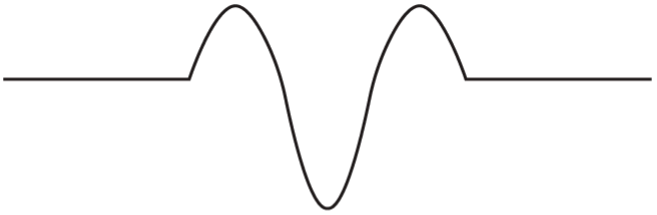


Which of the following shows the string when both waves have moved a distance of half a wavelength?

☒ **A**

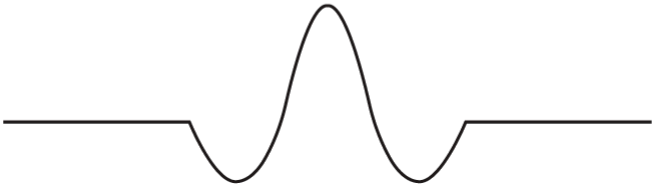


☒ **B**



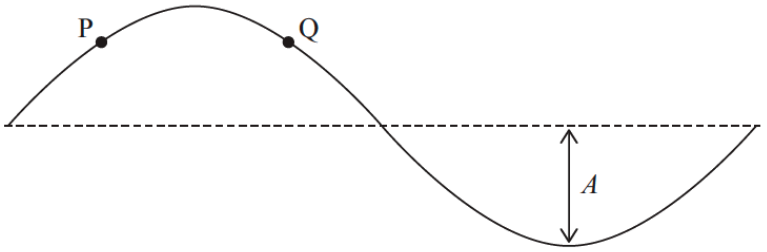
☒ **C**

☒ **D**



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4 The diagram shows a wave of amplitude A on a string.
P and Q are two points on the string.



The wave on the string is a stationary wave.

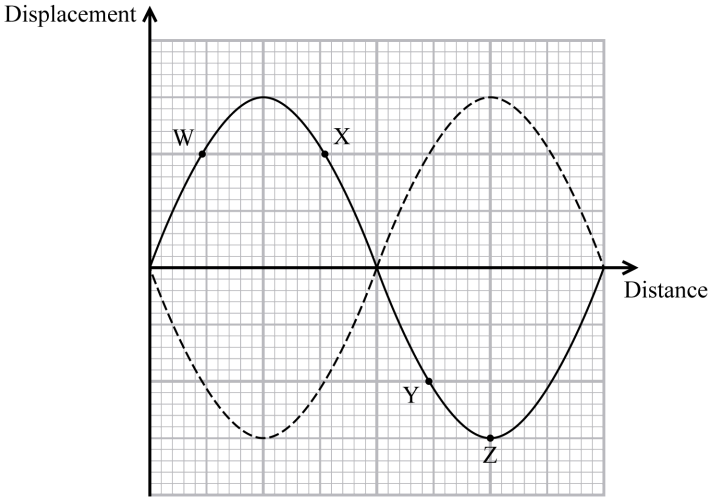
Which row of the table is correct?

	Phase difference between P and Q	Amplitude of oscillation of P and Q
☒ **A**	0°	equal to A
☒ **B**	0°	less than A
☒ **C**	90°	equal to A
☒ **D**	90°	less than A

Medium Two or three steps. Roughly a third to a half of students get these right. **Question 5**

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5 The diagram shows how the displacement varies with distance along a stationary wave at two instants of time.



Which of the following statements is correct?

- ☒ **A** Points W and X are in antiphase.
- ☒ **B** Points W and Y are in phase.
- ☒ **C** Points X and Y are in phase.
- ☒ **D** Points X and Z are in antiphase.

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