

Waves in Air-Fluids-Solids

Question Paper

Level	GCSE (9-1)
Subject	Combined Science: Trilogy - Physics
Exam Board	AQA
Topic	6.6 Waves
Sub-Topic	Waves in Air-Fluids-Solids
Difficulty Level	Gold Level
Booklet	Question Paper

Time Allowed: 18 minutes

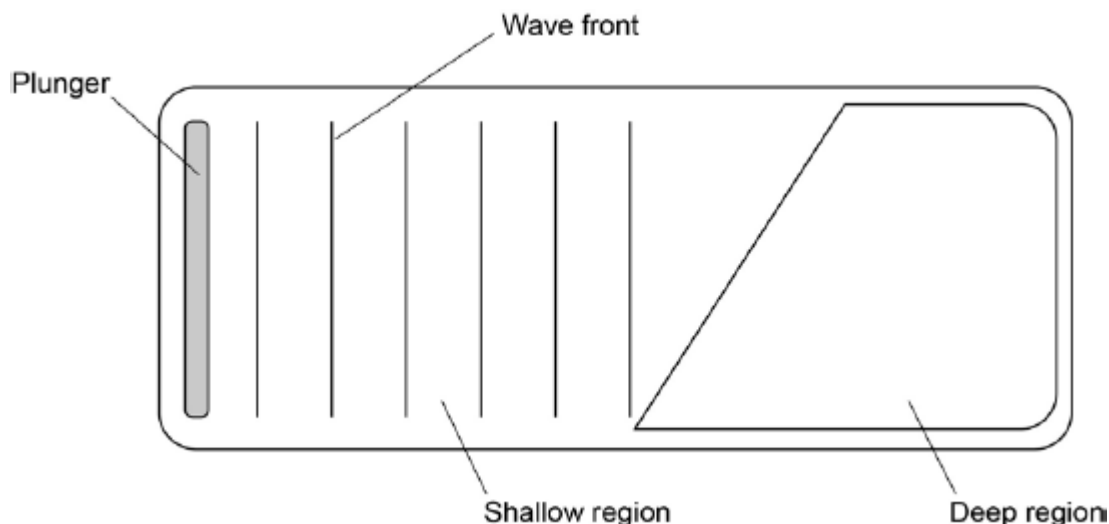
Score: /17

Percentage: /100

Grade Boundaries:

Q1. Some students did an investigation to study the behaviour of waves.

The figure below shows a ripple tank that they used to model the behaviour of waves.



(a) Complete the wave fronts on the figure above.

Show how the wave is refracted as it passes from the shallow region into the deep region.

(1)

(b) Explain what happens to the waves as they pass into the deep region.

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(2)

(c) The waves generated on the surface of the water are transverse waves.

Describe the differences between longitudinal waves and transverse waves.

You may include labelled diagrams to help your answer.

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(3)

- (d) Some students investigate the properties of the waves generated in the figure above.

Student **A** says ‘the waves move water from one end of the tank to the other’.

Student **B** says ‘that’s wrong. Only the waves move, not the water’.

Suggest what the students could do to decide which of them is correct.

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(2)

- (e) Another student uses a ripple tank where all the water is the same depth.

She measures the wavelength of each wave as 0.34 m.

The period of each wave is 0.42 s.

Calculate the speed of the wave.

Use the correct equation from the Physics Equation Sheet.

Give the unit.

Give your answer to three significant figures.

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Speed =

Unit =

(5)
(Total 13 marks)

- Q2.** (a) The student is using a microphone connected to a cathode ray oscilloscope (CRO).



The CRO displays the sound waves as waves on its screen. What does the microphone do?

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(2)

- (b) The amplitude, the frequency and the wavelength of a sound wave can each be either increased or decreased.

- (i) What change, or changes, would make the sound quieter?

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(1)

- (ii) What change, or changes, would make the sound higher in pitch?

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(1)
(Total 4 marks)