

# General Wave Properties

## Question Paper 1

Level	IGCSE
Subject	Physics (0625/0972)
Exam Board	Cambridge International Examinations (CIE)
Topic	General Physics
Sub-Topic	General Wave Properties
Booklet	Question Paper 1

**Time allowed:** 19 minutes

**Score:** /15

**Percentage:** /100

### Grade Boundaries:

9	8	7	6	5	4	3	2	1
>85%	75%	68%	60%	55%	50%	43%	35%	<30%

## Question 1

Sound waves of frequency 2.0 kHz travel through a substance at a speed of 800 m/s.

What is the wavelength of the waves?

- A 0.40m      B 2.5m      C 400m      D 1600m

## Question 2

The frequency of a wave is doubled. The speed of the wave does not change.

What happens to the wavelength of the wave?

- A. It becomes four times as large.
- B. It does not change.
- C. It doubles.
- D. It halves.

### Question 3

A water wave passes into a region where the wave travels more slowly.

As it passes into the slow region, what happens to the frequency and what happens to the wavelength of the wave?

	frequency	wavelength
A	decreases	remains the same
B	increases	remains the same
C	remains the same	decreases
D	remains the same	increases

## Question 4

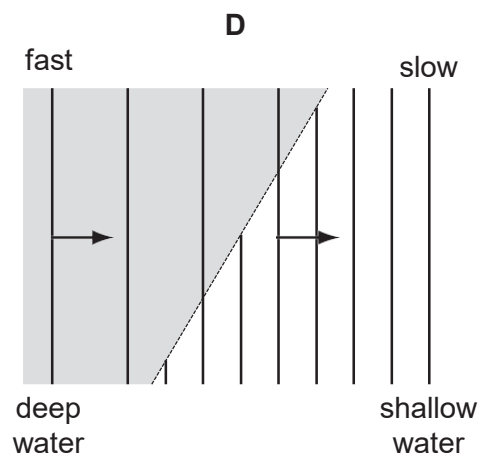
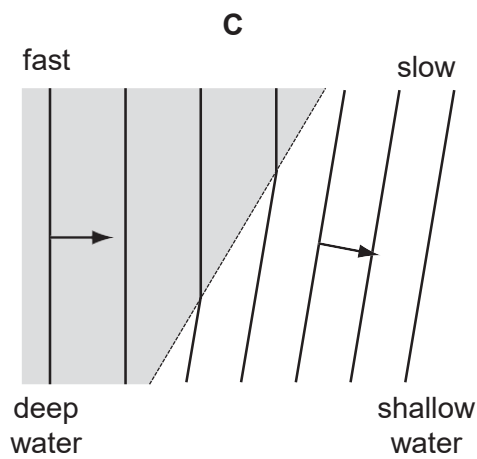
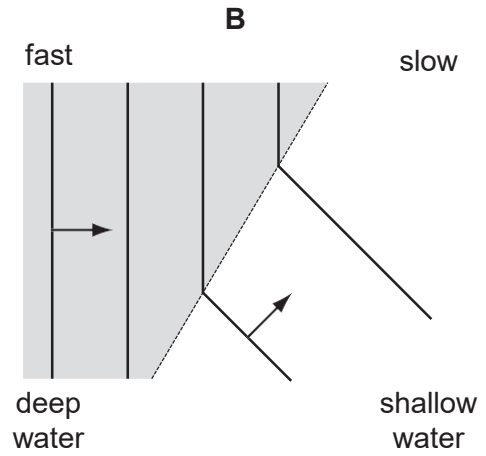
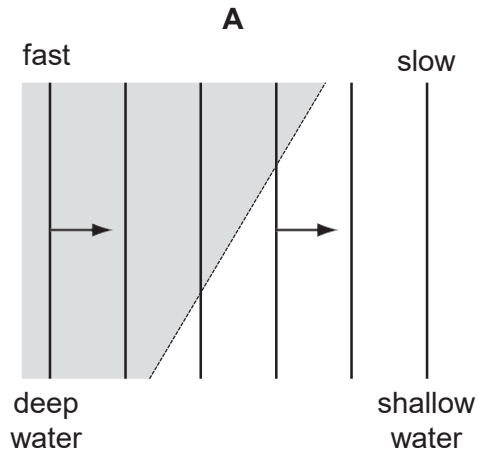
Which row shows the natures of light waves, sound waves and X-rays?

	light waves	sound waves	X-rays
A	longitudinal	longitudinal	transverse
B	longitudinal	transverse	longitudinal
C	transverse	longitudinal	transverse
D	transverse	transverse	longitudinal

## Question 5

The diagrams show water waves that move more slowly after passing into shallow water.

Which diagram shows what happens to the waves?



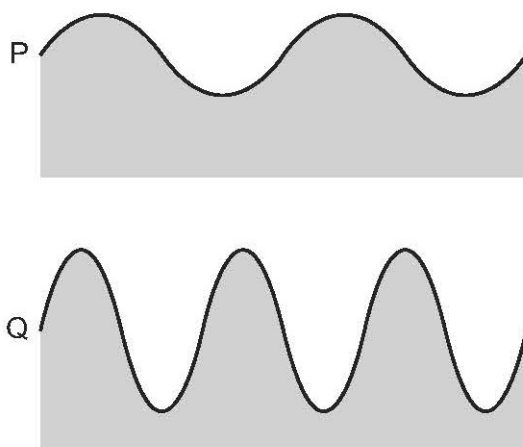
## Question 6

What is the number of wavefronts per second that pass a fixed point?

- A the amplitude of the wave
- B the frequency of the wave
- C the speed of the wave
- D the wavelength of the wave

## Question 7

The diagrams show two water waves P and Q that are travelling at the same speed on the surface of a pond. The diagrams are to the same scale.



Which wave has the greater amplitude and which wave has the greater frequency?

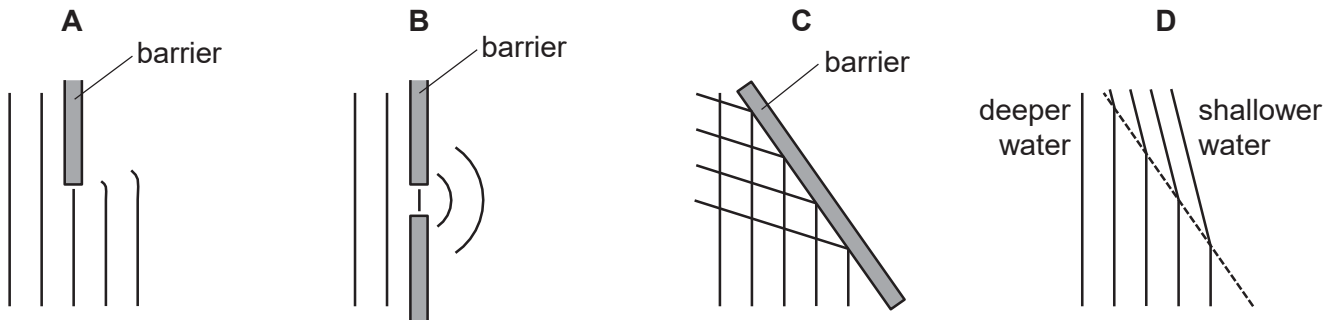
	greater amplitude	greater frequency
A	P	P
B	P	Q
C	Q	P
D	Q	Q



## Question 8

The diagrams represent water waves in a tank.

Which diagram represents a wave that changes speed?



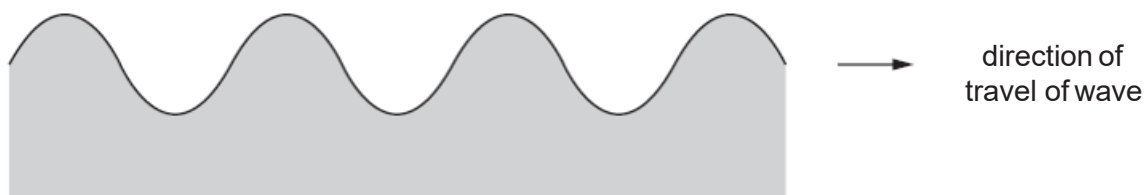
## Question 9

What is the frequency of a wave?

- A. the distance that a wavefront travels every second
- B. the distance from one wavefront to the next
- C. the number of wavefronts produced per second
- D. the time taken for a wavefront to pass a certain point

## Question 10

The diagram shows a side view of a water wave at a particular time. The diagram is drawn full size.

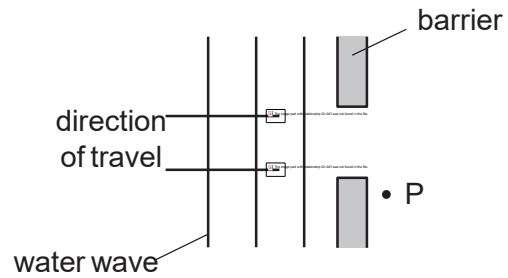


Which statement about the wave is correct?

- A The wave is longitudinal and the frequency can be measured from the diagram.
- B The wave is longitudinal and the wavelength can be measured from the diagram.
- C The wave is transverse and the frequency can be measured from the diagram.
- D The wave is transverse and the wavelength can be measured from the diagram.

## Question 11

The diagram shows a water wave approaching a barrier with a gap.



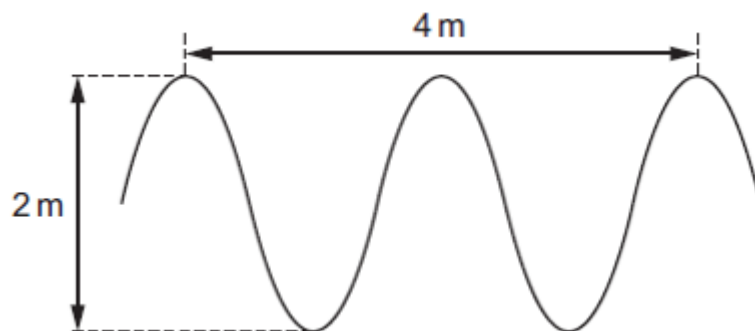
The wave reaches point P.

What is the name of the effect that causes the wave to reach point P?

- A diffraction
- B dispersion
- C reflection
- D refraction

## Question 12

The diagram represents a water wave.

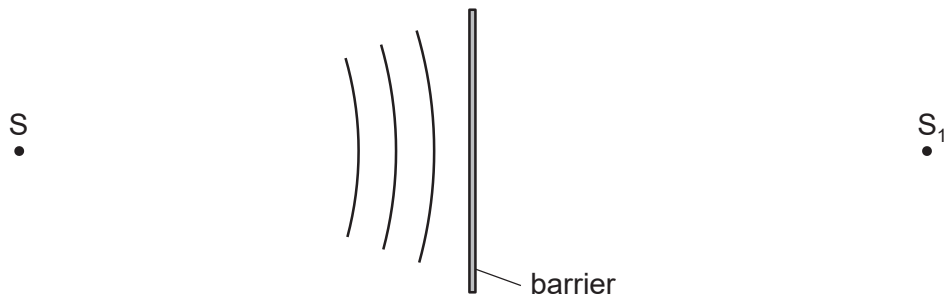


Which row shows the amplitude and the wavelength of the wave?

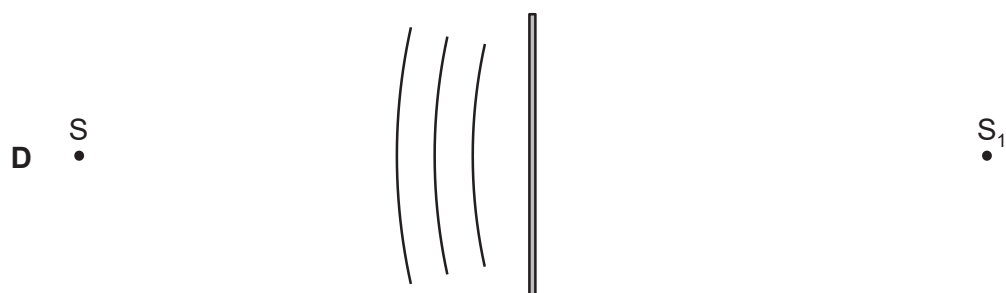
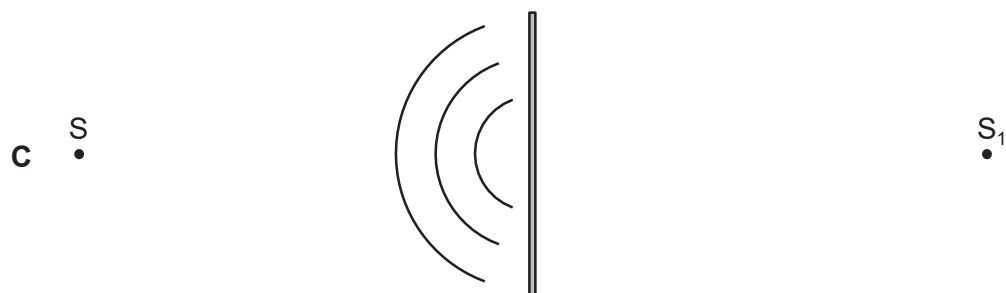
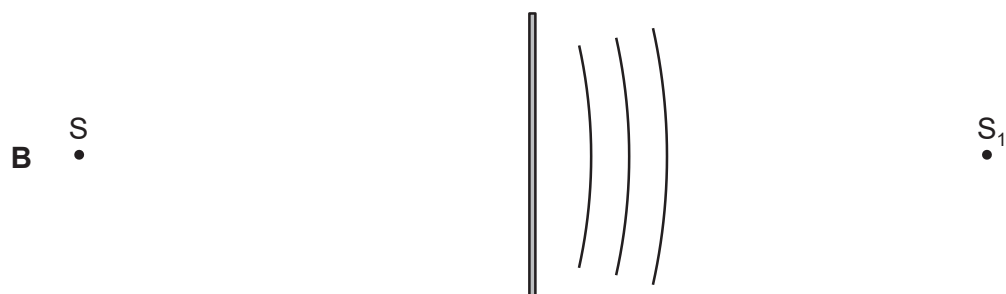
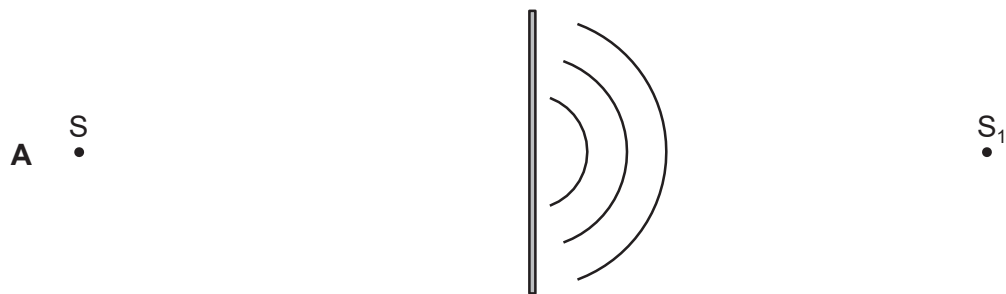
	amplitude/m	wavelength/m
A	1	2
B	1	4
C	2	2
D	2	4

### Question 13

The diagram represents circular wavefronts coming from point S. The wavefronts strike a barrier and are reflected so that they appear to come from point  $S_1$ .



Which diagram shows the reflected wavefronts?



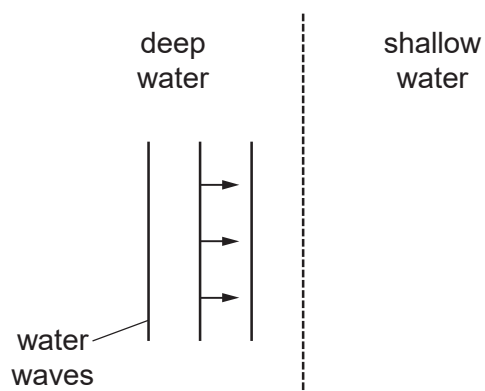
## Question 14

Which row correctly defines a type of wave and gives a correct example?

	wave type	direction of vibrations	example
A	longitudinal	parallel to direction of wave travel	radio waves
B	longitudinal	perpendicular to direction of wave travel	light waves
C	transverse	parallel to direction of wave travel	light waves
D	transverse	perpendicular to direction of wave travel	radio waves

## Question 15

A water wave moves quickly in deep water.



The wave now enters shallow water and its speed decreases.

Which row shows what happens to the frequency of the wave, and what happens to the wavelength of the wave?

	frequency	wavelength
A	decreases	decreases
B	decreases	does not change
C	does not change	decreases
D	does not change	does not change