

General Properties of Waves

Question Paper

Course	CIE IGCSE Physics
Section	3. Waves
Topic	General Properties of Waves
Difficulty	Hard

Time Allowed	10
Score	/5
Percentage	/100

Question 1

Sound waves travel at a speed of 1500 m/s through a substance. Their wavelength is 5.00 cm.

What is their frequency?

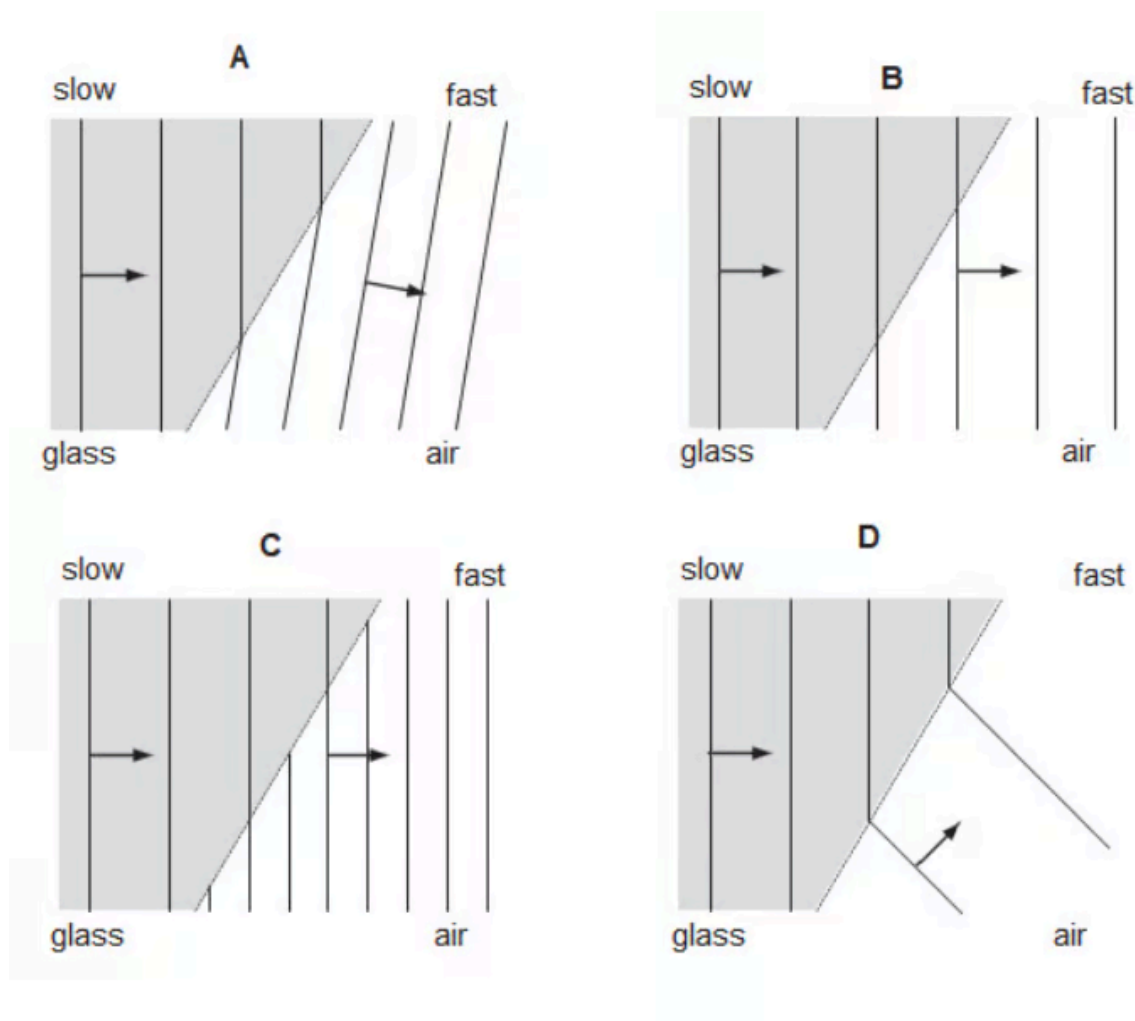
- A. 30 kHz
- B. 75 Hz
- C. 7.5 kHz
- D. 300 Hz

[1 mark]

Question 2

The diagrams below show the wavefront diagrams of light as it passes from glass into air. They are magnified many times.

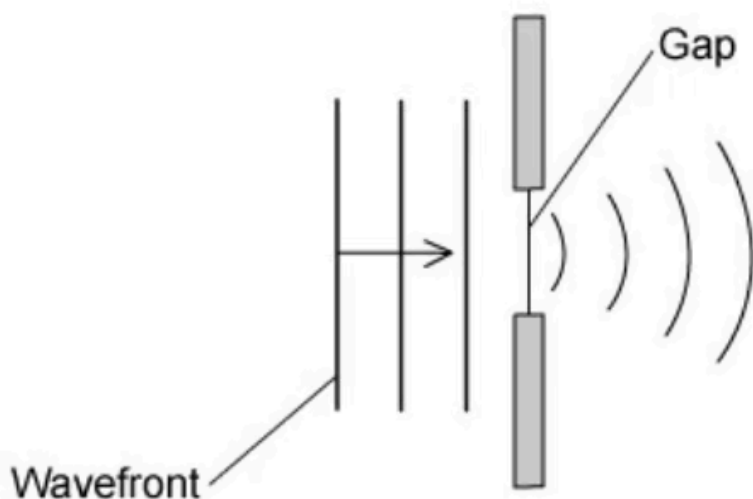
Which diagram correctly shows what happens to the wavefronts as they pass the glass-air boundary?



[1 mark]

Question 3

The diagram shows a plane water wave approaching a gap as viewed from above.



How could the situation be changed so that the waves on the far side of the gap do not spread out as far?

- A. Decrease the speed of the waves (but keep their wavelength the same).
- B. Increase the speed of the waves (but keep their wavelength the same).
- C. Make the gap a little smaller.
- D. Make the gap a little bigger.

[1 mark]

Question 4

A small child throws a stone into a very still pond.

Where the stone hits the water, waves travel outwards in a circular pattern until they reach the side of the pond.

In a very uncharacteristic move for a small child, he notices that six waves arrive in a time of 3.2 s (the child has a remarkably accurate internal clock).

To 3 significant figures, what is the frequency of the waves?

- A. 1.50 Hz
- B. 19.2 Hz
- C. 0.533 Hz
- D. 1.88 Hz

[1 mark]

Question 5

With skillful use of particular laboratory equipment, water can be used to demonstrate reflection, refraction and diffraction.

For each of these, which row shows whether or not the wavelength of the water waves changes?

	Reflection	Refraction	Diffraction
A	yes	yes	yes
B	no	no	no
C	yes	yes	no
D	no	yes	no

[1 mark]