Sound – 2022 November IGCSE 0625

1. Nov/2022/Paper_11/No.24

An observer stands at the finish line of a 100 m race. He wants to time the winner's run. He starts his stop-watch as soon as he sees the smoke from the starting gun instead of when he hears the bang.

What is the reason for doing this?

A Light travels much faster than sound.

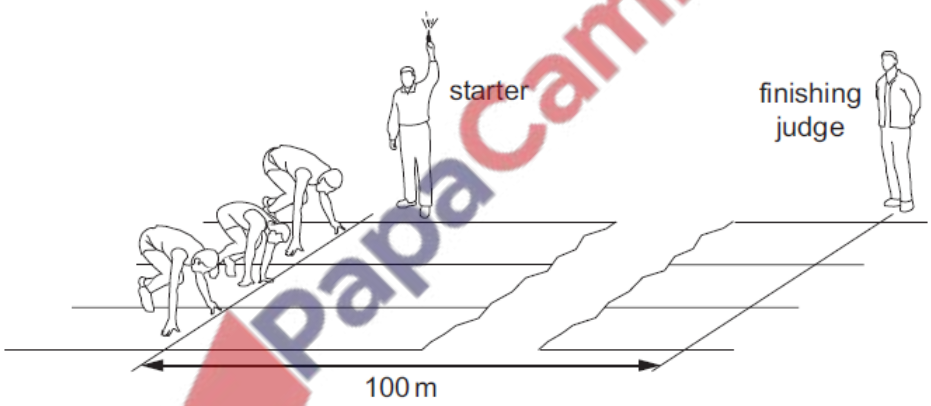
B There is a risk he might respond to an echo from a wall.

C Humans react slower to sound than to light.

D Humans react more quickly to sound than to light.

2. Nov/2022/Paper_12,13,23/No.24

A 100 m race is started by firing a gun. The gun makes a bang and a puff of smoke at the same time.



When does the finishing judge see the smoke and when does he hear the bang?

	sees the smoke	hears the bang
A	almost immediately	almost immediately
B	almost immediately	after about 0.3 s
C	after about 0.3 s	almost immediately
D	after about 0.3 s	after about 0.3 s

3. Nov/2022/Paper_21/No.22

The speed of sound in air is 330 m / s.

How do the speeds of sound in concrete and water compare with this speed?

	speed in concrete	speed in water
A	greater	greater
B	greater	less
C	less	greater
D	less	less

4. Nov/2022/Paper_21/No.24

An observer stands at the finish line of a 100 m race. He wants to time the winner's run. He starts his stop-watch as soon as he sees the smoke from the starting gun instead of when he hears the bang.

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5. Nov/2022/Paper_22/No.17

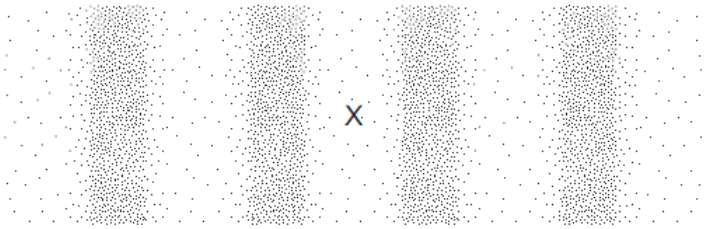
A sound wave travels from air into water.

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

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

6. Nov/2022/Paper_22,23/No.22

The diagram shows the air molecules in part of a sound wave at a particular moment in time.



Which statement is **not** correct?

A Earlier, there was compression at X.

B Later, there will be a rarefaction at X.

C This part of the wave is travelling horizontally across the page.

D This part of the wave is travelling towards the top of the page.

7. Nov/2022/Paper_33/No.7

Two students, A and B, determine the speed of sound.

They are standing side by side at a distance of 520 m from a wall, as shown in Fig. 7.1.

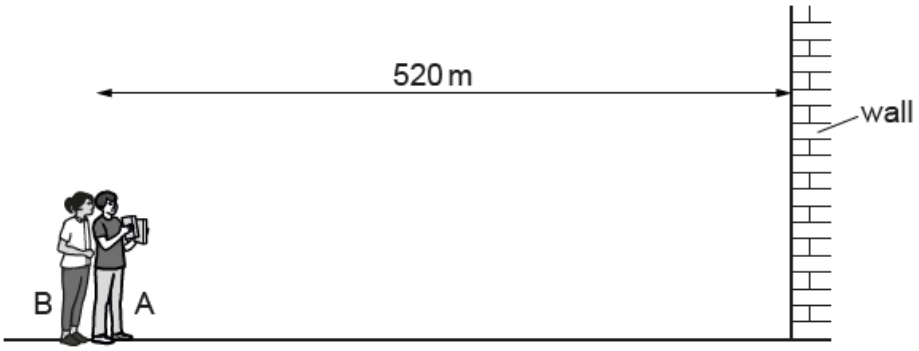


Fig. 7.1

Student A makes a loud sound by banging two blocks of wood together once. A short time later, both students hear the sound reflected from the wall.

(a) (i) State the term for the reflected sound.

..... [1]

(ii) Table 7.1 lists properties of a sound wave.
Compare the properties of the original sound and the reflected sound. For each property, place a tick (✓) in one column.

The first property is done for you.

Table 7.1

property	same	different
speed	✓	
wavelength		
loudness		
frequency		
amplitude		
longitudinal		

[3]

(b) Student B measures the time between the original sound and the reflected sound.

(i) Suggest a suitable device for measuring the time interval between hearing the original sound and hearing the reflected sound.

..... [1]

(ii) The time interval between hearing the original sound and hearing the reflected sound is 3.1 s.
Use information shown in Fig. 7.1 to calculate the speed of sound.

speed of sound = ... m/s [3]

[Total: 8]