Sound

Question Paper

Course	CIE IGCSE Physics
Section	3. Waves
Topic	Sound
Difficulty	Medium

Time Allowed 10

Score /5

Percentage /100

Question 1

When objects vibrate, they produce sound waves.

An object in a room vibrates. However, a person in that same room does not hear anything. Why not?

A. The room contains no air.

B. The sound waves are travelling too fast.

C. The amplitude of the sound waves is too great.

D. The frequency of the sound waves is too great.

[1 mark]

Question 2

After a lockdown drill at a school, the management team notes that the lockdown siren is too quiet, and its pitch is too low to be heard at a distance.

They call the company that supplied the siren and ask them to make the alarm louder, and to give it a higher pitch.

What effect does the change have on the resulting sound wave produced by the siren?

A. It has a larger amplitude and a lower frequency.

B. It has a larger frequency and a lower amplitude.

C. It has a smaller frequency and a larger amplitude.

D. It has a larger frequency and a larger amplitude.

[1 mark]

Question 3

A teacher uses a piece of lab equipment called a signal generator, which he connects to a speaker.

This apparatus can be used to make a particularly irritating noise.

The teacher makes four sounds of different frequencies with the signal generator. Which one can be heard by the student?

A. 10 Hz

B. 30 kHz

C. 440 Hz

D. 120 kHz

[1 mark]

Question 4

Echoes can sometimes be heard where a person is surrounded by distant, hard, flat surfaces.

In Greek mythology, Echo is a mountain nymph who was cursed by Hera to be only able to repeat the last words she heard. This ends tragically when she falls in love with Narcissus who, alas, loves only his own reflection.

In Physics, which wave property causes an echo?

A. Reflection

B. Refraction

C. Diffraction

D. Dispersion

[1 mark]

Question 5

A boy named Narcissus participates in a class experiment to measure the speed of sound. He finds the large, flat wall of a building and stands a known distance away from it. He then claps his hands.

A very short time later, he hears the sound of the clap returning to him as an echo.

Why?

A. The sound waves are reflected from the wall.

B. The sound waves are refracted by the wall.

C. The energy of the sound waves spreads out as they travel away from Narcissus.

D. The wind is blowing towards Narcissus, and the sound waves are blown back towards him.

[1 mark]