

Sound – 2022 Nov O Level 5054

1. **Nov/2022/Paper_11/No.25**

An oscilloscope is used to demonstrate a sound.

Which feature of the oscilloscope trace is affected by the quality (timbre) of the sound?

- A amplitude
- B frequency
- C shape
- D wavelength

2. **Nov/2022/Paper_12/No.27**

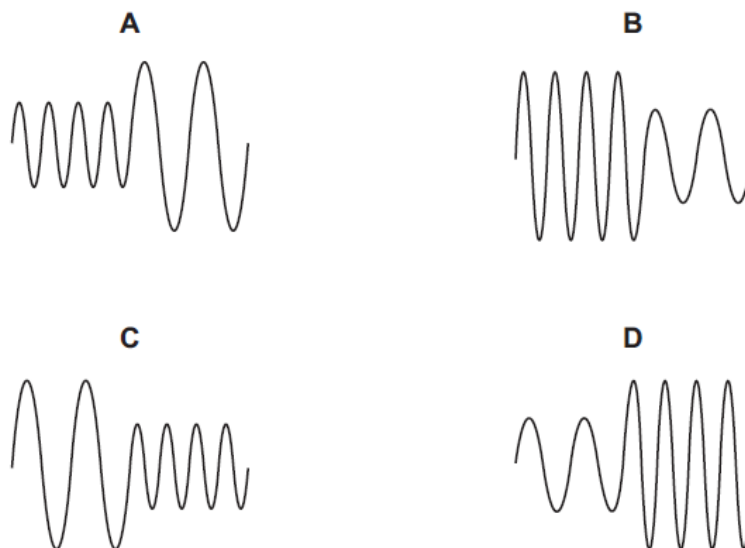
Which two frequencies are both outside the range of audible frequencies for a healthy human ear?

- A 2.0 Hz and 500 Hz
- B 2.0 Hz and 25 kHz
- C 25 Hz and 25 kHz
- D 500 Hz and 25 kHz

3. **Nov/2022/Paper_12/No.28**

Sound waves are displayed as a trace on the screen of an oscilloscope.

Which trace shows a sound that becomes quieter with a higher pitch?



4. Nov/2022/Paper_22/No.4

A sound wave, travelling in air or water, contains compressions and rarefactions.

- (a) Describe an experiment to show that a medium is required to transmit sound waves. You may draw a labelled diagram if you wish.

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..... [3]

- (b) When a sound wave passes through air or water, the molecules of the air or water move. Describe the motion of the molecules due to the sound wave.

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..... [2]

- (c) Describe what is meant by 'a rarefaction'.

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..... [1]

(d) Fig. 4.1 shows a dolphin.

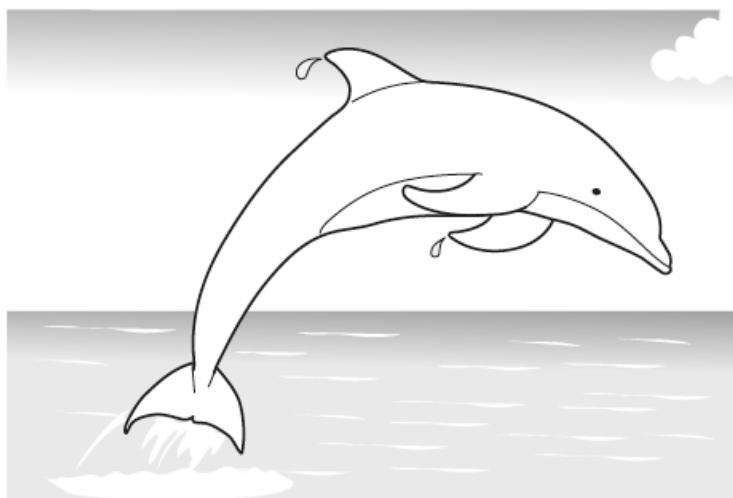


Fig. 4.1

The range of audible sound frequencies for the dolphin is 75 Hz to 140 000 Hz.

In water, the speed of sound is 1500 m/s.

Calculate the smallest wavelength of sound in water that the dolphin can hear.

wavelength = [2]

[Total: 8]