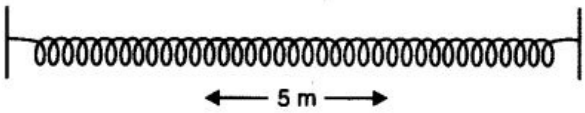
MORE QUESTIONS SOLVED

I. MULTIPLE CHOICE QUESTIONS Choose the correct option:
Question 1. A wave in slinky travelled to and fro in 5 sec the length of the slinky is 5 m. The velocity of wave is



(a) 10 m/s
(b) 5 m/s
(c) 2 m/s
(d) 25 m/s
Answer: (c)

Question 2. Loud sound can travel a larger distance, due to
(a) higher amplitude
(b) higher energy
(c) high frequency
(d) high speed
Answer (c)

Question 3. We can distinguish between sound having same pitch and loudness, this characteristic of sound is
(a) tone
(b) note
(c) pitch
(d) timber
Answer: (b)

Question 4. Speed of sound depends upon
(a) temperature of medium
(b) pressure of medium
(c) temperature of source producing sound
(d) temperature and pressure of medium
Answer: (d)

Question 5. Speed (s), wavelength' (X) and frequency (v) of sound are related as
(a) s = υ x v
(b) v = s x υ
(c) υ = s x v
(d) υ = s/v
Answer: (c)

Question 6. To hear a distinct echo the time interval between the original sound and the reflected sound must be:
(a) 0.2 s
(b) 1 s
(c) 2 s
(d) 0.1 s
Answer: (d)

Question 7. Reverberation of sound is used in
(a) stethoscope
(b) trumpets

(c) megaphone
(d) all of these
Answer: (d)

Question 8. Children under the age of 5 can hear upto:
(a) 20 kHz
(b) 25 kHz
(c) 20 Hz
(d) 25 Hz
Answer: (b)

Question 9. Dolphins, bats and porpoise uses
(a) ultrasound
(b) infrasound
(c) both (a) and (b)
(d) none of these
Answer: (a)

Question 10. The part of human ear that converts sound vibrations into electrical signals are:
(a) Tympanic membrane
(b) Hammer
(c) Stirrup
(d) Cochlea
Answer: (d)

II. VERY SHORT ANSWER TYPE QUESTIONS

Question 1. Is sound wave longitudinal or transverse?
Answer: Sound wave is longitudinal in nature.

Question 2. What is the relation between frequency (v) and time period of a sound wave?
Answer: $v = 1/T$
Frequency is inversely proportional to time period.

Question 3. In which of the three media air, water or steel does sound travel the fastest?
Answer: Sound travels fastest in steel.

Question 4. Which has a higher pitch—the sound of a whistle or that of a drum?
Answer: The sound of whistle has higher pitch.

Question 5. What is pitch?
Answer: The way our brain interprets the frequency of an emitted sound is called the pitch.

Question 6. How can we distinguish one sound from another having the same pitch and loudness?
Answer: The quality or timber of sound helps us to distinguish one sound from another having the same pitch and loudness.

Question 7. What is the audible range of frequency for human beings?
Answer: The audible range of frequencies for human beings is 20 Hz to 20,000 Hz.

Question 8. What is one Hz?
Answer: Hz is the unit of frequency, called as Hertz. One Hertz is equal to one cycle per second.

Question 9. Define speed of sound.
Answer: The speed of sound is defined as the distance travelled per unit time by compression or rarefaction.

Question 10. What is 'note' of sound?
Answer: The sound produced due to a mixture of several

frequencies is called a note, it is pleasant to listen to.

Question 11. Find the frequency of a wave whose time period is 0.002 second.
Answer:

$$\text{Frequency} = \frac{1}{\text{Time period}}$$

$$\text{Frequency} = \frac{1}{0.002} = 500 \text{ Hz}$$

Question 12. What is the time period-of sound wave?
Answer: The time taken by two consecutive compressions or rarefactions to cross a fixed points is called the time period of the wave.

Question 13. What is the minimum distance required to hear distinct echo?
Answer: The minimum distance of the obstacle from the source of sound should be 17.2 m.

Question 14. What is reverberation?
Answer: The repeated reflection that results in the persistence of sound is called reverberation.

Question 15. What is SONAR?
Answer: SONAR is—Sound Navigation and Ranging. It is a device that uses ultrasonic waves to measure the distance, direction and speed of underwater objects by getting the reflection of sound.

Question 16. What is 'ultrasonic' and 'infrasonic' sound wave?
Answer: Sound waves with frequencies below the audible range (less than 20 Hz) are termed as "infrasonic" and those sound waves with frequencies above the audible range (more than 20000 Hz) are termed as "ultrasonic".

Question 17. What should be the time interval between the originated sound and the reflected sound to be heard distinctly?
Answer: To hear a distinct sound the time interval between the originated sound and the reflected sound must be at least 0.1 second.

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