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Excercise

1. Choose the correct answer.

Sound can travel through

- (a) gases only
- (b) solids only
- (c) liquids only
- (d) solids, liquids and gases.

Answer: (d) solids, liquids and gases.

- 2. Which of the following voices is likely to have minimum frequencu?
- (a) Baby girl
- (b) Baby boy
- (c) A man
- (d) A woman

Answer: (c) A man

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- 3. In the following statements, tick 'T' against those which are true, and 'F' against those which are false.
- (a) Sound cannot travel in vacuum. (True)
- (b) The number of oscillations per second of a vibrating object is called its time period. (False)
- (c) If the amplitude of vibration is large, sound is feeble. (False)
- (d) For human ears, the audible range is 20 Hz to 20,000 Hz. (True)
- (e) The lower the frequency of vibration, the higher is the pitch. (False)
- (f) Unwanted or unpleasant sound is termed as music. (False)
- (g) Noise pollution may cause partial hearing impairment. (True)
- 4. Fill in the blanks with suitable words.
- d

(a) Time taken by an object to complete one oscillation is called
(b) Loudness is determined by the of vibration.
(c) The unit of frequency is
(d) Unwanted sound is called
(e) Shrillness of a sound is determined by theof
vibration.
Answer:
(a) Time taken by an object to complete one oscillation is called

- (a) Time taken by an object to complete one oscillation is called time period.
- (b) Loudness is determined by the <u>amplitude</u> of vibration.
- (c) The unit of frequency is hertz (Hz).
- (d) Unwanted sound is called noise.
- (e) Shrillness of a sound is determined by the frequency of vibration.
- 5. A pendulum oscillates 40 times in 4 seconds. Find its time period and frequency.

Answer:

Frequency of oscillations is the number of oscillations of a vibrating object per second. Therefore frequency is = 40 vibrations /4

seconds= 10 Hertz.

Time period is the time required to complete one oscillation. Or it is the inverse of time period. Therefore time period = 1/10 = 0.1 seconds.

6. The sound from a mosquito is produced when it vibrates its wings at an average rate of 500 vibrations per second. What is the time period of the vibration?

Answer:

Time Period given by the inverse of the frequency. Time Period= 1/Frequency of oscillation = 1/500 = 0.002 sec.

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