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
frequency?
(a) Baby girl
(b) Baby boy
(c) A man
(d) A woman
Answer: (c) A man

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.
(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 the _____of
vibration.
Answer:
(a) Time taken by an object to complete one oscillation is called
time period.
(b) Loudness is determined by the amplitude 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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