



INDIAN SCHOOL AL WADI AL KABIR



CLASS: VIII	DEPARTMENT: SCIENCE 2023 -2024	DATE: 14.12.2023
TEXTBOOK- Q & A	CHAPTER: SOUND	Note: A4 FILE FORMAT
NAME OF THE STUDENT	CLASS & SEC:	ROLL NO.

1. Choose the correct answer.

Sound can travel through

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

Ans: (d) solids, liquids and gases.

2. Voice of which of the following is likely to have a minimum frequency?

- (a) Baby girl (b) Baby boy (c) A man (d) A woman

Ans: (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 a 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 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) The time taken by an object to complete one oscillation is called the time period.
- (b) Loudness is determined by the amplitude of vibration.
- (c) The unit of frequency is Hertz.
- (d) Unwanted sound is called Noise.

(e) The 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

Ans:

The number of oscillations per second of the vibrating body is known as the frequency of oscillation.

Frequency = Total number of oscillations/Total time taken

$$= 40/4$$

$$= \underline{10 \text{ Hz}}$$

Time period is the time taken to complete one oscillation. It is also the inverse of frequency.

Time period = 1/ Oscillating frequency

$$= 1/10$$

$$= 0.1 \text{ s}$$

$$\therefore \text{frequency} = 10 \text{ Hz}$$

Time period = 0.1 s

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?

Ans: Time period is defined as the time taken to complete one oscillation. It is also the inverse of frequency.

Time period = 1/Oscillation frequency

Oscillation frequency = 500 Hz

Time period = $1/500 = 0.002 \text{ s}$

7. Identify the part which vibrates to produce sound in the following instruments.

(a) Dholak

(b) Sitar

(c) Flute

Ans: a) Dholak - Vibrations of a stretched membrane.

b) Sitar - Vibrations of stretched strings.

c) Flute - Vibrations of the air column.

8. What is the difference between noise and music? Can music become noise sometimes?

Ans: A noise is a sound which is unpleasant to our ears. It is produced due to irregular or non-periodic vibrations.

Sounds which are unpleasant to hear are:(a)Sounds from bus horns and truck horns.
(b) Electrical generator sounds. (c)Gunshot sounds. (d) Jackhammer sounds.

Music - A sound which is pleasant to our ears. It is produced due to regular or periodic vibrations. Sounds from flutes, pianos and violins are pleasant to hear.

Yes, sometimes when the music is played at high volumes, it becomes noise.

9. List sources of noise pollution in your surroundings.

Ans: Noise pollution sources are -

(a) Bus and car horns. (b) Firecrackers and loudspeakers. (c) High volumes in televisions and transistors. (d) mixers at home e) Sirens from factories

10. Explain in what way noise pollution is harmful to humans.

Ans: Several health issues are associated with noise pollution. They are as follows:

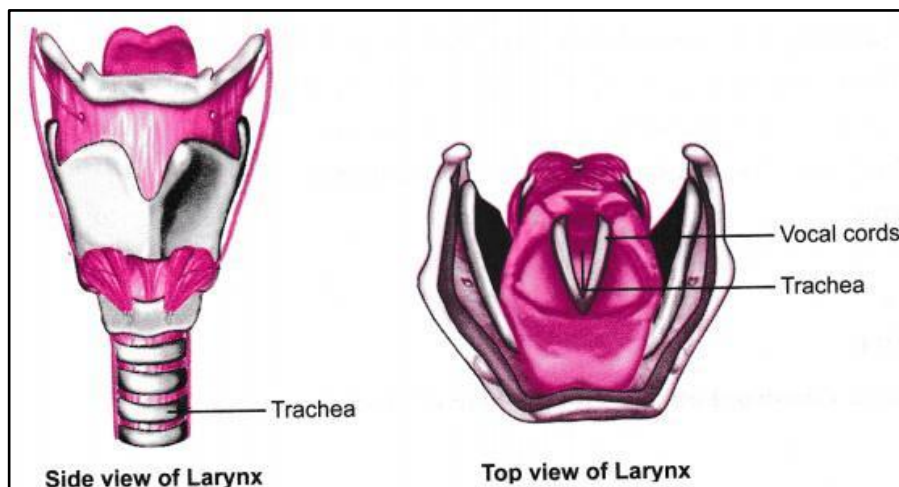
(a) Stress (b) Headache(c) Hearing loss (d) Hypertension

11. Your parents are going to buy a house. They have been offered one on the roadside and another three lanes away from the roadside. Which house would you suggest your parents should buy? Explain your answer.

Ans: It is better to buy a house which is three lanes away from the roadside as there will be less noise as compared to the one on the main road. The noises can be caused by vehicles. As the distance between the source and the listener increases, the intensity of the noise decreases. So, it's better to buy the house which is three lanes away.

12. Sketch the larynx and explain its function in your own words.

Ans:



In humans, the sound is produced by the larynx. When we swallow something, the larynx moves. There are two vocal cords stretched across the larynx. The air passes through a small gap which is present in between them. The lungs force the air into the gap when we speak and this vibrates the vocal cord, due to which sound is produced.

13. Lightning and thunder take place in the sky at the same time and the same distance from us. Lightning is seen earlier and thunder is heard later. Can you explain why?

Ans: The speed of light is more than the speed of sound. Thus, lightning is seen first which is accompanied by thunder later.

PREPARED BY Mr. VIKRANT PURANDARE	CHECKED BY HoD SCIENCE
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