

**CBSE Class–VIII Science**  
**NCERT SOLUTION**  
**Chapter-13**  
**SOUND**

**1. Choose the correct answer :**

**Sound can travel through**

- (a) Gases only**
- (b) Solid only**
- (c) Liquid only**
- (d) Solids, liquids and gases**

**Ans: (d) Solids, liquids and gases**

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

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

**Ans: (a) Baby girl.**

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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.**
- (b) The number of oscillations per second of a vibrating object is called its time period.**
- (c) If the amplitude of vibration is large, sound is feeble.**
- (d) For human ears, the audible range is 20 Hz. To 20,000 Hz.**
- (e) The lower the frequency of vibration, the higher is the pitch.**
- (f) Unwanted or unpleasant sound is termed as music.**
- (g) Noise pollution may cause partial hearing impairment.**

**Ans: (a) T (b) F (c) F (d) T (e) F (f) F (g) T**

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**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 \_\_\_\_\_ .  
(c) The unit of frequency is \_\_\_\_\_ .  
(d) Unwanted sound is called \_\_\_\_\_ .  
(e) Shrillness of a sound is determined by the \_\_\_\_\_ of vibration.

**Ans: (a)** Time taken by an object to complete one oscillation is called **time period**.  
**(b)** Loudness is determined by the **amplitude**.  
**(c)** The unit of frequency is **hertz**.  
**(d)** Unwanted sound is called **noise**.  
**(e)** Shrillness of a sound is determined by the **pitch** of vibration.

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**5. A pendulum oscillates 40 times in 4 seconds. Find its time period and frequency.**

**Ans:** No. of oscillations = 40.

Time Taken = 4 sec.

$$\begin{aligned}\text{Frequency} &= \frac{\text{No. of Oscillation}}{\text{Time Taken}} \\ &= \frac{40}{4} = 10 \text{ Hz}\end{aligned}$$

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

**Ans:** No. of Vibration in 1 second = 500.

Therefore, Frequency= 500Hz.

$$\begin{aligned}\text{Time-period} &= \frac{1}{\text{Frequency}} \\ &= \frac{1}{500} = 0.002 \text{ Second}\end{aligned}$$

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

- (a) Dholak**
- (b) Sitar**
- (c) Flute**

**Ans: (a)** Dholak - Stretched membrane.

**(b)** Sitar - Stretched string

**(c)** Flute - Air column.

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

**Ans:** The unpleasant sound is called noise. Whereas pleasant sound is called music. Noise can produce so many health hazards, whereas music brings about soothing effect.

Yes, music can become a noise sometimes when the musical instruments produce very high volume sounds.

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**9. List sources of noise pollution in your surroundings.**

**Ans:** The sources of noise pollution are :

- (i)** The sound produced by buses and trucks.
  - (ii)** The sound produced at the construction site.
  - (iii)** The sound produced by playing of T.V., radio and loudspeaker.
  - (iv)** Bursting of crackers, and sound of big machines in the factories.
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**10. Explain in what way noise pollution is harmful to humans.**

**Ans:** The noise pollution cause many health related problems. Lacks of sleep, hypertension, anxiety, etc. are some of the problems that may caused due to noise pollution. Moreover, a person who is exposed to a loud sound continuously may get temporary or permanent deafness.

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**11. Your parents are going to buy a house. They have been offered one on the roadside**

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**and another three lanes away from the roadside. Which house would you suggest your parents should buy ? Explain your answer.**

**Ans:** I would suggest my parents to buy the house which is three lanes away from the roadside because this would protect us from noise pollution which is maximum at roadside building.

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

**Ans:** The other name of larynx is voice box. It is present at the upper end of the windpipe. The function of larynx is to produce sound.

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

**Ans:** Because speed of light is more than the speed of sound. The light travels at the speed of 3,00,000 km/s which is very large in comparison to the speed of sound which travels at the rate of 330 m/s in air. That is why lightening is seen earlier and thunder is heard later.

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