

CLASS 9 SCIENCE

CHAPTER 10 • SOUND

MCQs • Multiple-Choice Practice

1. Sound is produced by:

- A. Vibrating objects
- B. Stationary objects
- C. Objects at rest only
- D. Light sources

3. Sound waves in air are generally:

- A. Transverse
- B. Longitudinal
- C. Electromagnetic
- D. Circular

5. The regions of high density and pressure in a longitudinal sound wave are called:

- A. Rarefactions
- B. Compressions
- C. Crests
- D. Troughs

2. Sound is classified as a mechanical wave because it:

- A. Travels only in vacuum
- B. Requires a material medium for propagation
- C. Is always transverse
- D. Travels without energy transfer

4. In a sound wave, the particles of the medium:

- A. Travel permanently with the wave
- B. Vibrate about their mean positions
- C. Stop moving completely
- D. Move only in circles

6. The regions of low density and pressure are called:

- A. Compressions
- B. Rarefactions
- C. Crests
- D. Nodes

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7. The distance between two successive compressions is the:

- A. Amplitude
- B. Wavelength
- C. Frequency
- D. Time period

8. The number of complete vibrations per unit time is called:

- A. Frequency
- B. Amplitude
- C. Wavelength
- D. Intensity

9. The SI unit of frequency is:

- A. Metre
- B. Hertz
- C. Second
- D. Decibel

10. The time taken for one complete oscillation is called:

- A. Frequency
- B. Time period
- C. Amplitude
- D. Intensity

11. The relation between frequency f and time period T is:

- A. $f = T$
- B. $f = 1/T$
- C. $f = T^2$
- D. $f = T/2$

12. The maximum change in density from the average density in a sound wave is related to its:

- A. Amplitude
- B. Frequency
- C. Wavelength
- D. Time period

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13. The amount of sound energy passing through unit area per unit time is called:

- A. Pitch
- B. Intensity
- C. Frequency
- D. Wavelength

15. If frequency increases while the speed of sound in a medium remains constant, wavelength:

- A. Increases
- B. Decreases
- C. Remains unchanged
- D. Becomes infinite

17. A high-frequency sound has:

- A. Low pitch
- B. High pitch
- C. No pitch
- D. Zero amplitude

14. The speed of a sound wave is related to frequency and wavelength by:

- A. $v = f\lambda$
- B. $v = f/\lambda$
- C. $v = \lambda/f$
- D. $v = f + \lambda$

16. The pitch of a sound mainly depends on its:

- A. Frequency
- B. Amplitude
- C. Intensity only
- D. Speed only

18. Loudness of sound is mainly associated with:

- A. Amplitude
- B. Frequency only
- C. Wavelength only
- D. Time period only

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19. A sound with greater amplitude is generally perceived as:

- A. Louder
- B. Softer
- C. Lower in frequency
- D. Slower

21. Sound waves with frequency below 20 Hz are called:

- A. Ultrasonic
- B. Infrasonic
- C. Audible
- D. Musical

23. An echo is caused by:

- A. Absorption of sound
- B. Reflection of sound
- C. Refraction of light
- D. Production of heat

20. The human audible range is approximately:

- A. 2–200 Hz
- B. 20 Hz–20 kHz
- C. 200–2,000 Hz
- D. 20–200 kHz

22. Sound waves with frequency above 20 kHz are called:

- A. Infrasonic
- B. Ultrasonic
- C. Audible
- D. Subsonic only

24. Reverberation is produced mainly due to:

- A. Multiple reflections of sound
- B. Complete absorption of sound
- C. Absence of a medium
- D. Conversion of sound into light

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25. Which material is generally useful for reducing reverberation in an auditorium?

- A. Hard polished marble
- B. Soft sound-absorbing material
- C. Bare metal sheets
- D. Glass only

27. Ultrasonic waves are used in medical imaging because they can:

- A. Travel through tissues and produce reflected signals
- B. Travel only through vacuum
- C. Produce visible light
- D. Stop all vibrations

29. A speaker generally converts:

- A. Electrical signals into sound
- B. Sound into electrical signals
- C. Light into sound
- D. Mechanical energy into light only

26. Echolocation allows some animals to:

- A. Locate objects using reflected sound
- B. Produce light
- C. Change sound into electricity
- D. Measure mass directly

28. A microphone converts:

- A. Electrical energy into sound energy only
- B. Sound energy into electrical signals
- C. Light into sound only
- D. Heat into sound only

30. Which statement is correct about sound propagation?

- A. Particles of the medium travel from source to listener
- B. Energy is transferred while particles vibrate about their mean positions
- C. Sound can propagate through vacuum
- D. Sound transfers no energy

ANSWER KEY

Chapter 10 • Sound

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	A	2	B	3	B	4	B	5	B
6	B	7	B	8	A	9	B	10	B
11	B	12	A	13	B	14	A	15	B
16	A	17	B	18	A	19	A	20	B
21	B	22	B	23	B	24	A	25	B
26	A	27	A	28	B	29	A	30	B

Quick Revision: Sound production • Mechanical waves • Longitudinal waves • Compressions & rarefactions • Wavelength • Frequency • Time period • Amplitude • Intensity • Speed of sound • Pitch • Loudness • Audible range • Infrasound • Ultrasound • Echo • Reverberation • Echolocation • Microphone • Speaker