

Chapter-5

Worksheet-1

Section 1

- Q1. How sound is produced?
- Q2. Write short note on propagation of sound.
- Q3. Why a medium is required for sound to travel?
- Q4. Differentiate between longitudinal and Transverse waves.
- Q5. Explain characteristics of a sound wave in brief.
- Q6. How does Amplitude affect the sound?
- Q7. 'Speed of sound is fastest in solids'. Comment.
- Q8. Explain an activity to verify law of reflection of sound.
- Q9. What is Echo? How it is different from Reverberation?
- Q10. Explain the working principles of a stethoscope.

Section 2

- Q11. The sound can travel in air when:
- a) Particles of medium travel from one place to another
 - b) There is no moisture in the atmosphere
 - c) Disturbance travel from one place to another
 - d) Both particles as well as disturbance travel from one place to another

Answer: c

- Q12. We can distinguish between a man's voice and a woman's voice of the same loudness even without seeing them. This is due to a

characteristic of sound which measures the shrillness of sounds. Can you choose the correct unit of the quantity on which this characteristic of sound depends?

- a) Hertz
- b) m/s
- c) meter
- d) unit less

Answer: a

Q13. A key of mechanical piano is first struck gently and then struck again but much harder this time. What kind of change in sound will you observe in the second case?

- a) Sound will be louder but the pitch will not be different
- b) Sound will be louder and the pitch will also be higher
- c) Sound will be louder but the pitch will be lower
- d) Both loudness and pitch will remain unaffected

Answer: c

Q14. The echo-receiver of a sonar attached to a ship, receives the echo from the bottom of sea 4 seconds after the ultrasonic waves were sent into the sea. If the speed of sound in water is 1500 m/s, then what is the depth of the sea?

- a) 6000 m
- b) 3000 m
- c) 15000 m
- d) 3500 m

Answer: b

Q15. Before the main shock waves, the earthquake produces the characteristic sound waves which some animals like rhinoceros can hear. Can you guess the kind of sound waves produced here?

- a) Infrasonic
- b) Ultrasonic
- c) Audible
- d) None of these

Answer: a

Q16. On increasing the temperature, the speed of sound in air:

- a) Increases
- b) Decreases
- c) Does not change
- d) First increases then become constant.

Answer: a

Q17. We can easily distinguish between the sounds of the different singers even without having seen them. This is all due the different quality or timber of their sounds. On what factor does the quality of sound depend?

- a) Wavelength
- b) Waveform
- c) Wave frequency
- d) Wave amplitude

Answer: b

Q18. Before playing the orchestra in a musical concert, a sitarist tries to adjust the tension and pluck the string suitably. By doing so, he is adjusting

- i. Amplitude of the sound

ii. Frequency of the sitar string with the frequency of other musical instruments

iii. Intensity of sound

iii. Loudness of sound

Choose the correct option:

- a) (i) and (iii)
- b) only (ii)
- c) (ii) and (iv)
- d) only (iv)

Answer: b

Q19. The bats can fly in the darkness of night without colliding with the other objects by emitting special sounds while flying. Which characteristic of sound is used by the bats to navigate?

- a) Infrasound
- b) Ultrasound
- c) Audible sound
- d) None of these

Answer: b

Q20. Which of the following can produce longitudinal as well as transverse waves under different conditions?

- a) Bats
- b) Slinky
- c) Tuning fork
- d) None of these

Answer: b