50 MCQ Test: Sound Chapter
(Sainik School Entrance - 9th Class)
Instructions: Choose the correct option for each question. Each question carries 1 mark.

Part 1: Fundamentals of Sound

1. **Sound is produced by:**
   a) Heated objects
   b) Vibrating objects
   c) Stationary objects
   d) Magnetic objects
2. **Sound cannot travel through:**
   a) Solids
   b) Liquids
   c) Gases
   d) Vacuum
3. **The speed of sound is maximum in:**
   a) Air
   b) Water
   c) Steel
   d) Vacuum
4. **Sound waves are:**
   a) Transverse waves
   b) Longitudinal waves
   c) Electromagnetic waves
   d) Stationary waves
5. **The distance between two consecutive compressions or rarefactions is called:**
   a) Amplitude
   b) Frequency
   c) Wavelength
   d) Time period

Part 2: Characteristics of Sound

6. **The number of oscillations per second is called:**
   a) Amplitude
   b) Frequency
   c) Time period
   d) Wavelength
7. **The SI unit of frequency is:**
   a) Decibel
   b) Hertz
   c) Meter/second
   d) Pascal
8. **The loudness of sound depends on its:**
   a) Frequency
   b) Amplitude
   c) Speed
   d) Wavelength
9. **The pitch of sound depends on its:**
   a) Amplitude
   b) Frequency
   c) Speed
   d) Medium
10. **The quality or timbre of sound helps us distinguish between:**
    a) Loud and soft sounds
    b) High and low pitch sounds

c) Two different musical instruments playing same note
d) Fast and slow moving sounds

11. **The unit of loudness is:**
    a) Hertz
    b) Decibel
    c) Watt
    d) Newton
12. **Audible range of frequency for humans is:**
    a) 20 Hz to 20,000 Hz
    b) 0 Hz to 100 Hz
    c) 200 Hz to 2,000 Hz
    d) 20,000 Hz to 2,00,000 Hz

Part 3: Speed of Sound and Factors

13. **Speed of sound in air at 0°C is approximately:**
    a) 332 m/s
    b) 300 m/s
    c) 1500 m/s
    d) 5000 m/s
14. **With increase in temperature, the speed of sound in air:**
    a) Increases
    b) Decreases
    c) Remains same
    d) First increases then decreases
15. **Speed of sound in water is approximately:**
    a) 330 m/s
    b) 500 m/s
    c) 1500 m/s
    d) 5000 m/s
16. **The formula for speed of sound is:**
    a) $v = f \times \lambda$
    b) $v = f/\lambda$
    c) $v = \lambda/f$
    d) $v = f + \lambda$
17. **The speed of sound in air is affected by:**
    a) Temperature only
    b) Humidity only
    c) Both temperature and humidity
    d) Neither temperature nor humidity

Part 4: Reflection, Echo, and Reverberation

18. **The repetition of sound caused by reflection from a surface is called:**
    a) Refraction
    b) Echo
    c) Reverberation
    d) Diffraction
19. **For hearing a distinct echo, the minimum distance between source and reflecting surface should be:**
    a) 11.3 m
    b) 17.2 m
    c) 22.6 m
    d) 34.4 m
20. **Persistence of sound in an auditorium due to repeated reflections is called:**
    a) Echo
    b) Reverberation

c) Resonance
d) Vibration

21. **Megaphones and loudspeakers are based on the principle of:**
    a) Refraction of sound
    b) Reflection of sound
    c) Absorption of sound
    d) Diffraction of sound
22. **Stethoscope works on the principle of:**
    a) Multiple reflection of sound
    b) Refraction of sound
    c) Absorption of sound
    d) Diffraction of sound
23. **Ceilings of concert halls are curved to:**
    a) Absorb sound
    b) Reflect sound evenly
    c) Increase temperature
    d) Decrease humidity

Part 5: Ultrasound and Applications

24. **Sounds of frequency above 20,000 Hz are called:**
    a) Infrasonic
    b) Audible
    c) Ultrasonic
    d) Sonic
25. **Bats navigate using:**
    a) Ultrasonic waves
    b) Infrasonic waves
    c) Audible sounds
    d) Light waves
26. **SONAR stands for:**
    a) Sound Navigation and Ranging
    b) Sonic Navigation and Reflection
    c) Sound Natural Resonance
    d) Sonic Natural Radiation
27. **SONAR uses which type of waves?**
    a) Radio waves
    b) Ultrasonic waves
    c) Infrasonic waves
    d) Light waves
28. **Which animal can hear ultrasonic sounds?**
    a) Human
    b) Dog
    c) Elephant
    d) Snake
29. **Ultrasound is used for:**
    a) Cleaning delicate parts
    b) Echocardiography
    c) Breaking kidney stones
    d) All of the above
30. **The technique used to examine internal organs using ultrasound is called:**
    a) Radiography
    b) Ultrasonography
    c) Tomography
    d) Photography

Part 6: Human Ear and Hearing

31. **The part of human ear that collects sound waves is:**
    a) Eardrum
    b) Cochlea
    c) Pinna
    d) Auditory nerve
32. **The vibrating membrane in human ear is:**
    a) Cochlea
    b) Pinna
    c) Eardrum
    d) Hammer
33. **The part of ear that converts sound vibrations into electrical signals is:**
    a) Pinna
    b) Eardrum
    c) Cochlea
    d) Auditory nerve
34. **Noise pollution is measured in:**
    a) Hertz
    b) Decibels
    c) Meters
    d) Watts
35. **The permissible noise level in a residential area during daytime is about:**
    a) 40 dB
    b) 55 dB
    c) 75 dB
    d) 100 dB

Part 7: Musical Instruments and Sound

36. **Veena and Sitar produce sound by:**
    a) Vibration of air column
    b) Vibration of strings
    c) Vibration of membrane
    d) Electronic means
37. **Flute and Shehnai produce sound by:**
    a) Vibration of strings
    b) Vibration of air column
    c) Vibration of membrane
    d) Electronic means
38. **Tabla and Mridangam produce sound by:**
    a) Vibration of strings
    b) Vibration of air column
    c) Vibration of membrane
    d) Electronic means
39. **When length of vibrating string increases, frequency:**
    a) Increases
    b) Decreases
    c) Remains same
    d) First increases then decreases
40. **The characteristic of sound that distinguishes a shrill sound from a flat sound is:**
    a) Loudness
    b) Pitch
    c) Quality
    d) Amplitude

Part 8: Advanced Concepts

41. **The phenomenon of sound bending around obstacles is called:**
    a) Reflection
    b) Refraction
    c) Diffraction
    d) Resonance
42. **When two sound waves of slightly different frequencies interfere, we hear:**
    a) Echo
    b) Reverberation
    c) Beats
    d) Resonance
43. **The phenomenon when frequency of external force matches natural frequency of object is called:**
    a) Reflection
    b) Refraction
    c) Resonance
    d) Diffraction
44. **Thunder is heard later than lightning because:**
    a) Light travels faster than sound
    b) Sound travels faster than light
    c) Thunder is produced later
    d) Light gets absorbed in clouds
45. **Shock waves produced by objects moving faster than sound are called:**
    a) Ultrasonic waves
    b) Sonic booms
    c) Infrasonic waves
    d) Seismic waves
46. **Sound travels fastest in which season?**
    a) Winter
    b) Summer
    c) Monsoon
    d) Same in all seasons
47. **The range of infrasonic sound is:**
    a) Below 20 Hz
    b) 20 Hz to 20,000 Hz
    c) Above 20,000 Hz
    d) 100 Hz to 1000 Hz
48. **Which part of the waveform represents maximum compression?**
    a) Crest
    b) Trough
    c) Node
    d) Antinode
49. **An echo is heard more clearly:**
    a) On a rainy day
    b) On a sunny day
    c) During night
    d) On a windy day
50. **The reflection of sound from a curved surface that focuses sound is principle behind:**
    a) Stethoscope
    b) Ear trumpet
    c) Whispering gallery
    d) All of the above

Answer Key:

1. b) Vibrating objects
2. d) Vacuum
3. c) Steel

4. b) Longitudinal waves
5. c) Wavelength
6. b) Frequency
7. b) Hertz
8. b) Amplitude
9. b) Frequency
10. c) Two different musical instruments playing same note
11. b) Decibel
12. a) 20 Hz to 20,000 Hz
13. a) 332 m/s
14. a) Increases
15. c) 1500 m/s
16. a) $v = f \times \lambda$
17. c) Both temperature and humidity
18. b) Echo
19. b) 17.2 m
20. b) Reverberation
21. b) Reflection of sound
22. a) Multiple reflection of sound
23. b) Reflect sound evenly
24. c) Ultrasonic
25. a) Ultrasonic waves
26. a) Sound Navigation and Ranging
27. b) Ultrasonic waves
28. b) Dog
29. d) All of the above
30. b) Ultrasonography
31. c) Pinna
32. c) Eardrum
33. c) Cochlea
34. b) Decibels
35. b) 55 dB
36. b) Vibration of strings
37. b) Vibration of air column
38. c) Vibration of membrane
39. b) Decreases
40. b) Pitch
41. c) Diffraction
42. c) Beats
43. c) Resonance
44. a) Light travels faster than sound
45. b) Sonic booms
46. b) Summer
47. a) Below 20 Hz
48. a) Crest
49. a) On a rainy day
50. d) All of the above