

Session 2013-14

Assignment for Class IX (Term 2)

Sound (Physics)

1. What is sound?
2. with the help of an activity show that vibrating objects produce sound.
3. How does sound propagate in a medium?
4. Why are sound waves called as mechanical wave?
5. Propagation of sound can be visualized as propagation of density variations or pressure variations in the medium. Comment.
6. Sound cannot travel through vacuum, demonstrate by an experiment.
7. With the help of an activity show that SOUND WAVES ARE LONGITUDINAL WAVES
8. Light is a transverse wave but it is not a mechanical wave. Why?
9. Differentiate between longitudinal and transverse wave.
10. How can we describe a sound wave?
11. Diagrammatically represent that Sound propagates as density or pressure variations
12. Show the sound wave in graphic form
13. A violin and a flute may both be played at the same time in an orchestra. Both sounds travel through the same medium, that is, air and arrive at our ear at the same time. Both sounds travel at the same speed irrespective of the source. But the sounds we receive are different. List the characteristics of sound which make them different from each other. On what factors do they depend.
14. How is a high pitched sound different from a low pitched sound. Support your answer graphically.

15. How is a louder sound different from a softer sound. Support your answer graphically
16. How can we distinguish one sound from another having the same pitch and loudness.
17. Differentiate between a tone and a note.
18. Differentiate between a musical sound and noise.
19. We sometimes use the terms “loudness” and “intensity” interchangeably, are they the same. Comment.
20. The sound of a thunder is heard a little later than the flash of light is seen.
21. On what factors does the speed of sound depend?
22. Write a short note on sonic boom.
23. With the help of an activity show that sound waves follow laws of reflection.
24. What is echo?
25. For hearing distinct echoes, what should be the minimum distance of the obstacle from the source of sound?
26. What is the cause of rolling of thunder?
27. What is reverberation? How is it reduced?
28. Give few uses of multiple reflection of sound.
29. Megaphones or loudhailers, horns, musical instruments such as trumpets and *shehanais*, send sound in a particular direction without spreading it in all directions How?
30. How does the sound of the patient’s heartbeat reaches the doctor’s ears in stethoscopes?
31. The ceilings of concert halls, conference halls and cinema halls are curved. Why?
32. What is the audible range of sound for human beings?
33. We can not hear the vibrations of a pendulum while the vibrations of the wings of a bee are audible to us. Why?
34. It is observed that some animals get disturbed before earthquakes. How?
35. How are moths able to escape capture?

36. How is infrasonic wave different from ultrasonic wave?
37. Discuss few applications of ultrasound in industries and medicine.
38. Ultrasounds are able to travel along well defined paths even in the presence of obstacles.
39. Ultrasound is generally used to clean parts located in hard-to-reach places. How?
40. Ultrasounds can be used to detect cracks and flaws in metal blocks. How?
41. Name the instrument which uses ultrasonic waves for getting images of internal organs of the human body. How does it function?
42. What is ultrasonography? Give its uses.
43. What is echocardiography?
44. What is SONAR. Name the three parameters which can be measured using it. How does the sonar work? What is this technique called and why?
45. How do bats search out prey and fly in dark night?
46. How do we hear?
47. Draw the well labeled diagram showing the internal structure of human ear.