Class IX

Assignment 13

PHYSICS ASSIGNMENT FOR DECEMBER SOUND

1. If you place some small blades on a drum, what will you observe when you beat this drum with a drum stick? Explain.
2. Describe an activity with a (a) metre scale (b) rubber band to show that only a vibrating body produces sound.
3. With the help of tuning fork demonstrate that sound is produced by a vibrating body.
4. What is vibrating in the following musical instruments producing by a musical sound? (a) Violin (b) drum (c) saxophone (d) flute (e) guitar (f) dholak (g) tabla (h) sitar
5. What is medium? What constitutes the medium?
6. Describe an activity to show sound travels faster through a solid medium than through a gaseous medium.
7. Describe an activity to show sound travels faster through a solid medium than through a liquid medium.
8. Describe the experiment to demonstrate that waves do not carry matter while travelling.
9. What are the characteristics of wave motion?
10. Distinguish between compression and rarefaction.
11. Draw a density – distance graph in case of a longitudinal wave and indicate the position of compression and rarefaction.
12. A tuning fork has a number 384 marked on it. What does this number signify?
13. Ocean wave of time period of 10 sec have a speed of 15m/s. what is the wavelength of these waves>
14. A boat at anchor is rocked by wave whose compression is 100 m apart. The wave velocity of the moving crest is 20m/s. what is the frequency of rocking of the boat?
15. A sound wave of frequency 640 Hz travels 8oom in 2.5 s. calculate: (a) speed of sound (b) wavelength of sound wave
16. What will happen to the loudness of the sound if:
    (a) Amplitude of a wave is tripled
    (b) Surface area of a vibrating body is decreased
    (c) The distance between the source and the observer is doubled.
    (d) The density of the medium decrease
    (e) The wind is blowing in the direction of propagation of sound
17. What is meant by reflection of sound?
18. Name any three devices based on reflection of sound.
19. What is the megaphone? Name the principle on which it is based.
20. What is the sound board?
21. Name a place where you can experience echo.
22. What do you mean by echo?
23. What are the conditions necessary for the formation of an echo?
24. Give reasons for the following:
    (a) A person pressed his ears against the railway track to find whether the train is approaching or not.
    (b) Speed of sound in solid is more than speed of sound in gas.
    (c) Speed of sound is more during a summer day than a cold winter night.
    (d) The speed of sound is affected by the direction of moving wind.
    (e) Sound travels faster than in a rainy day than a dry day.
    (f) How flying supersonic aircraft shatters glasses of the window panes of house.
    (g) People living near the airports having problems
    (h) Lighting is seen much earlier than the thunder is heard
    (i) A sound board is placed behind a speaker in an auditorium
25. Explain the structure and working of human ear.
26. Give reason for the following:
    (a) We cannot hear sound on vibrating our hands forward and backward.
    (b) Some animals get disturbed by earthquake
    (c) We cannot hear the sound produced by our heart beat.
    (d) Owners of dogs use gallant on are whistle.
27. Why is the velocity of sound more than that in water or air?
28. How can we know from a distance the car is approaching us?
29. Why do we not get echo at all places?

30. How is the pressure variation in a sound wave amplified in human ear?
31. Why do we have stages of auditorium curved background curtains, carpets and false ceilings?