Bharatiya Vidya Bhavans,V.M. Public School
Ch- SOUND

One marks questions

1. A human heart, on an average, is found to beat 75 times in a minute. Calculate its frequency.
2. Calculate the wavelength of a sound wave whose frequency is 220Hz and speed is 440m/s in a given medium.
3. How are the wavelength and frequency of a sound wave related to its speed?
4. Why is sound wave called a longitudinal wave?
5. Flash and thunder are produced simultaneously. But thunder is heard a few seconds after the flash is seen, why?
6. The frequency of a source of sound is 100Hz. How many times does it vibrate in a minute?
7. What is the frequency of a wave whose time period is 0.05 s?

Two marks questions

8. How moths of certain families are able to escape captures from bats? What is the range of frequencies associated with a) infra sound b) ultrasound?
9. Which wave property determines : a) loudness b) pitch?
10. Distinguish between loudness and intensity of sound.
11. Why are the ceilings of concert hall curved?
12. Give two practical applications of reflection of sound waves.
13. What is reverberation? How can it be reduced?
14. Explain how bats use ultrasound to catch their prey.

Three marks Questions

15. Explain why Can echoes not be heard in a small room?
16. Sound is produced due to a vibratory motion, then why a vibrating pendulum does not produce sound?
17. Explain the working and application of SONAR?
18. a) Draw the sound waves for a low pitched and the high pitched sound.
    b) write one use of ultrasonography.
    c) which wave property determines pitch?
19. With the help of a labelled diagram show that sound needs a material medium for its propagation.

Five Marks questions

20. a) Aparticular transmitter of Aakashvani broadcasts at 420.5m wavelength. Given the speed of radio waves 3x108m/s. Calculate the frequency at which the radio station broadcasts its programme.
    b) What is the direction of oscillations of the medium particles through which a i) transverse wave is propagating ii) longitudinal wave is propagating?
21. a) A person has hearing range of 20Hz to 20kHz. Calculate the wavelengths of the sound waves in air corresponding to above frequencies? Take speed of sound in air as 340m/s.
    b) A source is producing 15 waves in 3s. The distance between a crest and a trough is 10 cm. Find the frquency, the wavelength and the velocity of the wave.
22. a) A child hears anecho from a cliff 4seconds after the sound from a powerful cracker is produced. How far away is the cliff from the child? Take velocity of sound in air as 340m/s.
    b) A body is vibrating 6000 times in one minute. If the velocity of sound in air is 360m/s, find frequency of the vibration in Hz and wavelength of the soubd produced.

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