



TRY YOURSELF

ANSWERS

- The two important properties which a medium must possess for the propagation of mechanical waves through it are—
 - The medium should possess elasticity.
 - The medium should possess the property of inertia.
- The wave associated with each moving particles of matter like electrons, protons, etc. are known as matter waves.
- Pressure waves are the longitudinal waves which involves changes in volume and pressure during their propagation through a medium.
- Particles of the medium execute simple harmonic motion about their mean position.
- The quantity $(kx - \omega t + \phi)$ appearing as the argument of sine function in general equation of a wave is called phase of the wave.
- No, it is produced only when frequency of vibration lies between 20 Hz and 200 KHz.
- When the sound waves travel through air, adiabatic changes take place in the medium.
- Sound travels in solid with highest velocity. This is because coefficient of elasticity of liquids and gases is less.
- The two factors are (i) density of the medium and (ii) humidity in the surroundings.
- Velocity of sound in air increases by 0.61 m/s, when temperature rises by 1°C.
- Because in standing waves the particles of the medium vibrate about the mean position but disturbance does not travel in any direction.
- We hear the echo of the shout due to reflection of sound waves from the hill.
- When two or more waves simultaneously pass through a point, the disturbance at the point is given by the sum of the disturbances each wave would produce in absence of the other wave.
- Harmonics are the tone of frequencies which are integral multiple of the fundamental frequency.
- Nodes are the points that undergo the minimum displacement during each vibrating cycle of the standing wave, while the points at which amplitude of vibration is maximum are known as antinodes.
- For a closed pipe, only odd harmonics are present. Therefore, the required ratio will be $\nu_1 : \nu_2 : \nu_3 : \nu_4 : : 1 : 3 : 5 : 7$.
- When two sources of sound having slightly different frequencies are made to vibrate simultaneously, the intensity of the resultant sound wave varies producing periodic maxima and minima. Thus, the phenomena responsible for the formation of beats is interference of waves.
- When two waves of nearly equal frequencies, travelling in same directions superimpose, the intensity of sound at a point change with time periodically. This periodic variation in intensity of sound is called beats.

