CHAPTER 13

SOUND

Example 1:

Calculate the wavelength of a sound wave whose frequency is 220 Hz and speed is 440 m/s in a given medium.

Sol.

Given that,

Frequency of sound wave = 220 Hz

Speed of sound wave = 440 m/s

Calculate **wavelength**.

We know that,

Speed = Wavelength x Frequency

$V = \lambda . f$

440 = Wavelength x 220

Wavelength = 440/220

Wavelength = 2

Therefore, the wavelength of the sound wave = 2 meters

Example 2:

A person is listening to a tone of 500 Hz sitting at a distance of 450 m from the source of the sound. What is the time interval between successive compressions from the source?

Sol.

The time interval between successive compressions from the source is equal to the time period and the time period is reciprocal of the frequency. Therefore, it can be calculated as follows.

$T = 1/F$

$T = 1/500$

$T = 0.002$ s