

Chapter 13

SOUND

Audible and Inaudible Sounds

- Normal person hears all frequencies between 20 Hz to 20,000 Hz. So this range is called audible range.
- Humans can't hear frequency less than 20 Hz are called infrasonic sounds[Inaudible].
- Humans can't hear frequency greater than 20,000 Hz are called ultrasonic sounds[Inaudible].

Note:

- Dogs can hear ultrasonic frequencies
- The navigation system in 'Bats' depends on reflection ability of ultrasonic sounds.

Noise and Music:

Noise:

Unpleasant sounds are called noise.

Examples:

1. Sounds from construction work.
2. Sounds from class room in the absence of teacher.

Music:

Sound which is pleasing to the ear is called Music.

Example:

Sounds from guitar strings, harmonium etc.

Noise Pollution:

Presence of unwanted sounds in the environment is called Noise pollution.

Ex: Mainly noise pollution are sounds of vehicles explosions (like bursting of crackers), machines, loud speakers etc.

- The health problems due to noise pollutions are like lack of sleep, hypertension (high blood pressure) and may lose hearing capacity.
- Normal breathing 10dB

- Normal conversation 60dB
- Busy traffic 70 dB
- Sounds from factory 80dB

And above 80 dB, the noise becomes physically painful.

Note: The relation between speed (v) of sound, wavelength and frequency is $v = f\lambda$

