

# ACOUSTICS AND SOUND

## Warm up questions:

### 1) What does the acoustics deal with?

Acoustics is the science of sound. There are many kinds of sound and many ways that it affects our lives. We use sound to communicate and you might also know that acoustics is important for creating musical instruments or concert halls or surround sound stereo or hearing aids.

### 2) Guess what is the sound?

Sound.....

- 1) is a sensation produced by stimulation of the organs of hearing by vibrations transmitted through the air or other medium;
- 2) is an oral interpretation of written language;
- 3) is a declamation;
- 4) in air consists of consecutive regions of higher and lower air pressure relative to ambient air pressure (typically 1 atmosphere at sea level);
- 5) is a longitudinal compression wave which distorts a medium by creating moving fronts of high and low particle compression.

## Exercise:

Match the definition with correct word:

The **wavelength** ( $\lambda$ )

The number of times per second that a complete wave cycle passes an observer. It is measured in **Hertz (Hz)**.

The **period** (T)

The number of meters that a wave front can travel in a second. It is measured in **metres/second ( $m \cdot s^{-1}$ )**

The **frequency** (f)

The time it takes for one wave cycle to pass an observer. It is measured in **seconds (s)** (in speech milliseconds (ms) are commonly used).

The **speed or velocity of sound** (c)

The distance between successive wave fronts (ie. peak-to-peak distance). It is measured in **metres (m)**.