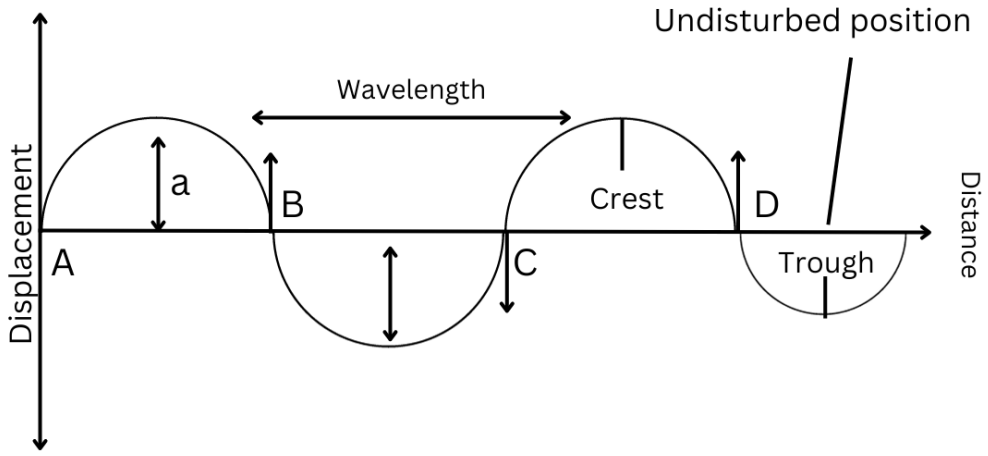
4.1 General Properties of Waves

Waves: This is a disturbance that travels through space and time carrying energy with it.
The general properties of a wave can be explained using the displacement-distance graph:



Wavelength: It is represented by the Greek letter lambda (**λ**). It is the distance between two points or two successive crests (Peaks) or troughs (calculated in m)

- Wavelength and frequency are inversely Proportional.

Frequency: Is represented by f. It is the number of complete waves generated per second". Its units are hertz (Hz)

Wave speed: It is represented by V. This is how fast a wave travels from one place to another. It is the distance moved in the direction of travel of the wave by a crest or any point on the wave in one second.

Amplitude: It is represented by a. This is the height of a crest or depth of a trough measured from the undisturbed Position.

Phase: These are the short arrows at A, B, C, and D Showing the Vibration.

The wave equation:

Speed of wave= Frequency x Wavelength

$v = f \times \lambda$

$f = \frac{1}{t}$

t is Time