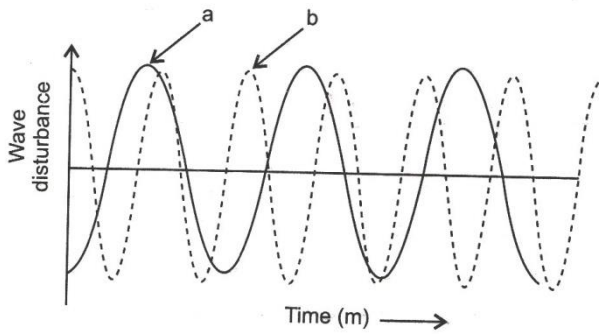
DEPARTMENT OF PHYSICS

WORKSHEET NO: 1

CLASS IX

SECTION : A

Conceptual Questions

1.	**Represent graphically by two separate diagrams in each case.** **i) Two sound waves having same amplitude but different frequencies.** **ii) Two sound waves having the same frequency but different amplitude.** **iii) Two sound waves having different amplitudes and also different wavelengths.**	3 (2012)
2.	**Write the differences between intensity of sound and loudness.**	2
3.	**Show a sound wave in graphic form and mention crest, trough wavelength and amplitude of the wave in it.**	1
4.	**Explain how defects in a metal block can be detected using ultrasound**	3
5.	**Which of the two graphs (a) and (b) representing the human voice is likely to be the male voice? Give reason.**  	1
6.	**Define longitudinal waves and give examples of them.**	1
7.	**Write the name of sound having a frequency of 35KHz.Write one application of this type of sound.**	1
8.	Distinguish between pitch and loudness of a sound.	2

SECTION :B

Numericals

9	**A source of sound produces 40 compressions and rarefactions in 0.4 sec. Find its frequency.**	**2**
10	**A radar signal is reflected by an aero plane and is received $2X10^{-5}$sec after it was sent.If the speed of these waves is $3X10^{8}$m/s, How far is the aero plane?**	**2**
11	**The wavelength of vibrations produced on the surface of water is 2cm. If the wavevelocity is 16m/s. Find its frequency and time period.**	**3**
12	**A ball is dropped into a pond from a height of 44.1m. The splash of sound is heard 3.13sec after the ball is dropped. Determine the velocity of sound in air.**	**3**
13	**A sound wave travels at a speed of 330m/s in air. If its wavelength is 1cm.What is the frequency of the wave? Will it be audible?**	**2**
14	**Wavelength of ripples produced on the surface of water is 0.14m. If the velocity of ripples is 42m/s, Calculate the number of ripples produced in a second.**	**2**
15	**A source of longitudinal wave vibrates 640 times in 2 seconds.If the velocity of the wave in air is 340m/s. Find its wavelength?**	**2**
16	**A sound wave of wavelength 0.332m has a time period of 10^{-3} s. If the time period is decreased to 10^{-4} s, Calculate the wavelength and frequency of new wave.**	**2**
17	**A person standing between two vertical cliffs and 640m away from the nearest cliff shouted. He heard the first echo after 4 seconds and the second echo 3 seconds later. Calculate** **i) The velocity of sound in air, and** **ii) The distance between the cliffs.**	**3 (2014)**
18	**Sound produced by a thunderstorm is heard 10s after the lightening is seen. Calculate the approximate distance of the thunder cloud. (Given speed of sound = 340m/s).**	**2**
2	**Ocean wave time period 0.01sec have a speed of 15m/s. Calculate the wavelength of these waves. Find the distance between the adjacent crest and trough.**	**2**
20	**A SONAR station picks up return signal after 3sec. How far away is the object? (Speed of sound in water is 1440m/s).**	**2**