

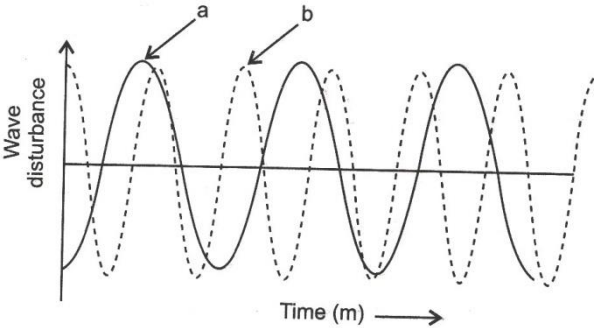
DEPARTMENT OF PHYSICS

WORKSHEET NO: 5

CLASS IX

SECTION : A

Conceptual Questions

1.	<b>Represent graphically by two separate diagrams in each case.</b> 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.	<b>Write the differences between intensity of sound and loudness.</b>	2
3.	<b>Show a sound wave in graphic form and mention crest, trough wavelength and amplitude of the wave in it.</b>	1
4.	<b>Explain how defects in a metal block can be detected using ultrasound</b>	3
5.	<b>Which of the two graphs (a) and (b) representing the human voice is likely to be the male voice? Give reason.</b> 	1
6.	<b>Define longitudinal waves and give examples of them.</b>	1
7.	<b>Write the name of sound having a frequency of 35KHz. Write one application of this type of sound.</b>	1
8.	<b>Distinguish between pitch and loudness of a sound.</b>	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 $2 \times 10^{-5}$ sec after it was sent. If the speed of these waves is $3 \times 10^8$ m/s, How far is the aero plane?	2
11	The wavelength of vibrations produced on the surface of water is 2cm. If the wave velocity 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 lightning 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