

CLASS IX: PHYSICS

SOUND CHAPTER ASSIGNMENT 2019-20

1. a. What is meant by reflection of sound? What type of surfaces are the best for reflecting sound?
b. Name any two objects which are good reflectors of sound.
2. A man standing 825 meters away from a cliff fires a gun. After how long will he hear its echo? Speed of sound in air is 330m/s. $(5s)$
3. Choose the infrasonic waves and ultrasonic waves from the following frequencies
a) 10,000Hz b) 30,000Hz c) 18 Hz d) 50,000Hz e) 10 Hz.
4. Amit, while verifying laws of reflection of sound measured the angle between incident sound wave and reflected sound wave to be 140° . What will be the angle of incidence?
5. The wavelength of vibrations produced on the surface of water is 3cm. If wave velocity is 16m/s find the frequency and time period. $(533.3Hz)$ $(0.002s)$
6. A sound wave has a frequency of 2KHz and a wavelength of 45 cm. It takes 4s to travel a certain distance. Calculate the distance it travels. $(3600m)$
7. With the help of a labeled diagram explain the echo ranging technique.
8. Draw the graphical representation to show the correct relationship between the angle of incidence and angle of reflection of a sound wave.
9. A source produces 15 waves in 3 seconds. The distance between a crest and trough is 15cm. Find a) frequency b) wavelength and c) velocity of the wave. $(5Hz, 30cm)$ $(1.5m/s)$
10. A sound of wavelength 68cm travels 850m in 2.5s. Calculate the velocity of the sound wave and the frequency of the sound wave. $(340m/s, 500Hz)$
11. A man standing 50 m away from a wall fires a gun. Calculate the time after which an echo is heard. (Take speed of sound in air is 320m/s.) $(0.3125s)$
12. If a thunder is heard by a man 4 seconds after the lightning is seen, how far is the lightning from the man? (speed of sound = 330m/s) $(1320m)$
13. A sound wave of frequency 700 Hz travels 900m in 3s. Calculate the wavelength of the sound wave. $(\lambda = 0.43m)$
14. Sound waves travel with a speed of about 330m/s. What is the wavelength of sound whose frequency is 550 Hz? $(0.6m)$
15. Ocean waves of time period of 10s have a speed of 15m/s. What is the wavelength of these waves? $(150m)$