

Chapter- Sound

Q1. How does a sound making object differ from one that is silent?

Answer: Sound making object can vibrate easily.

Q.2 How does sound from a sound producing body travel through air to reach our ears?

Answer: Sound from a sound producing body travel through air to reach our ears by making regular compression and rarefaction..

Q.3 Why a sound cannot be heard on the moon?

Answer: A sound cannot be heard on the moon due to absence of medium air

Q.4 How do astronauts talk to one another on the surface of moon and Why?

Answer: Astronauts communicate with the help of radio waves on moon because these waves do not need a medium to travel

Q.5 If you want to hear a train approaching from far away, why is it more convenient to put the ear to the track?

Answer: This is because sound can travel through railway track (solid) faster than through air.

Q.6 State one observation from everyday life which shows that sound travels much more slowly than light?

Answer: We hear thunder after lightening.

Q.7 What is the scientific name for the following? The number of vibrations made per second.

Answer: Frequency

Q.8 Why do we not hear the screams of a bat?

Ans: This is because the screams are ultra sonic(above 20,000 hertz) which human ear cannot hear.

Q.9 Which of the following frequency of sound can be heard by a dog but not by a man?

(a) 50,000 hertz (b) 15,000 hertz

Answer: A sound of frequency 50,000 hertz can be heard by a dog but not by a man

Q.10 Give two causes of noise pollution from the homes.

Answer: . In the home noise pollution is caused by television radio and music systems at high volume, some kitchen appliances, desert coolers, air conditioners etc.

Q.11 Sound of different pitch can be produced using a flute. Explain, how?

Answer: If we blow a flute, the air column vibrates and produces sound. Flute contains small air columns, when air is bowed through the mouth piece the air columns start vibrating which produces sound.

Q. 12. How Jal Tarang produces sound?

Answer: In Jal-tarang musical instrument the cup containing minimum water produces the sound of lowest frequency or lowest pitch. As the amount of water in the cup goes on increasing, the frequency (or the pitch) of the sound produced also goes on increasing.

Q. 13. If 125 oscillations are produced in 5 seconds, what is the frequency in hertz?

Answer: in 5 seconds 125 oscillations are produced

So, in 51 seconds $125/5 = 25$ oscillations are produced

Hence, the frequency = 25Hz

Q. 14. What is the frequency of a vibrating body whose time-period is 0.05 second?

Answer: $f = 1/t = 1/0.05 = 100/5 = 20\text{HZ}$

Q. 15. State true or false

(i) Sound can be produced by beating an object irrespective of whether there are vibrations or not.

(ii) The sound of a tabla normally has a lower pitch than the sound of a violin.

(ii) A short flute will produce sound of lower pitch than a long flute.

Answer: (i) –False [Sound is produced from a vibrating object.]

(ii) -True [The sound of a tabla normally has a lower pitch than the sound of a violin.]

(iii) –True[A short flute will produce sound of lower pitch than a long flute.]

Q.16. Give reasons Why Trees planted along the roads reduce noise?

Answer: Trees are planted along the roads and around buildings so that it could cut off sound vibrations produced from vehicles speakers etc. by absorbing them, hence leading in prevention of Noise pollution.

Q.17. what are transverse and longitudinal waves?

Answer: Longitudinal waves: A wave in which the particles of the medium vibrate back and forth in the same direction in which the wave is moving is called longitudinal wave. Example: sound waves.

Transverse waves: A wave in which the particles of the medium vibrate at right angles to the direction, in which the wave is moving, is called transverse wave. Example: Light waves.