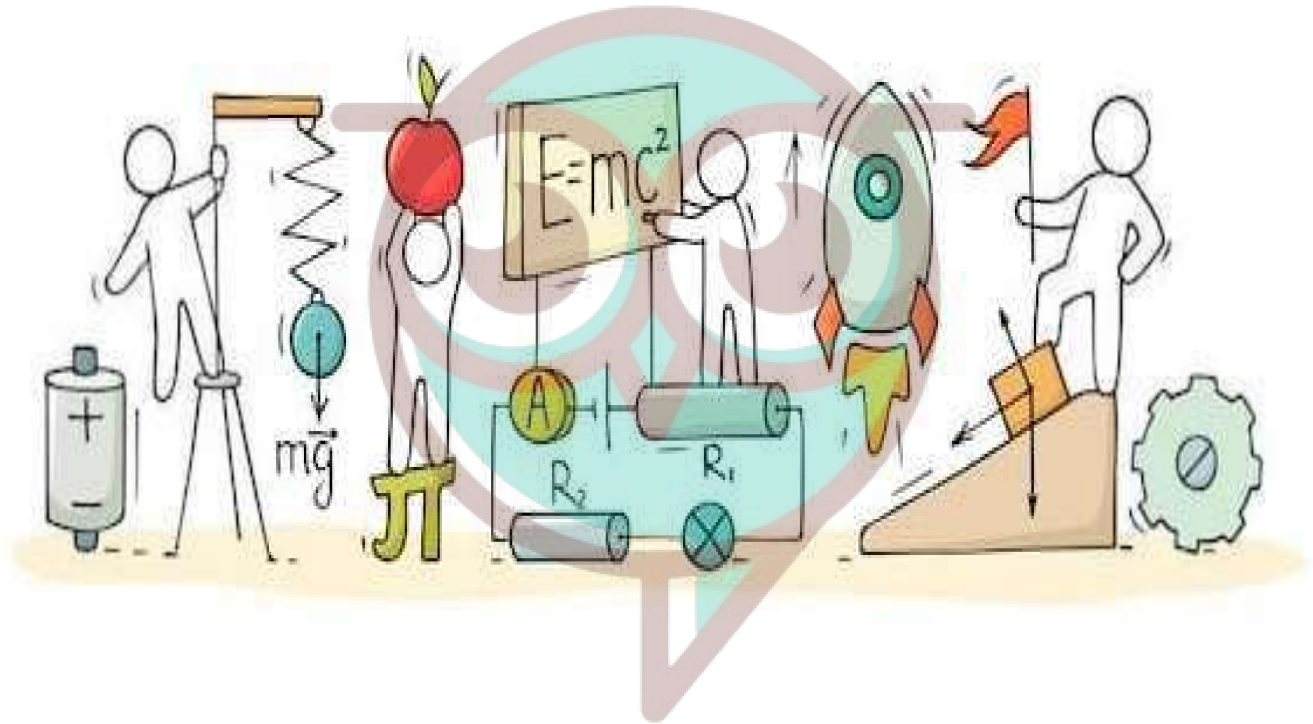


SCIENCE

Chapter 13: Sound



Swotters

Important Questions

Multiple Choice questions-

Question 1. The voice box is also called as

- (a) stomach
- (b) heart
- (c) larynx
- (d) mouth

Question 2. Sound is a kind of

- (a) work
- (b) energy
- (c) force
- (d) pressure

Question 3. The hearing range of human ear is

- (a) 20 Hz to 20,000 Hz
- (b) less than 20 Hz
- (c) more than 20,000 Hz
- (d) 20 Hz to 25,000 Hz

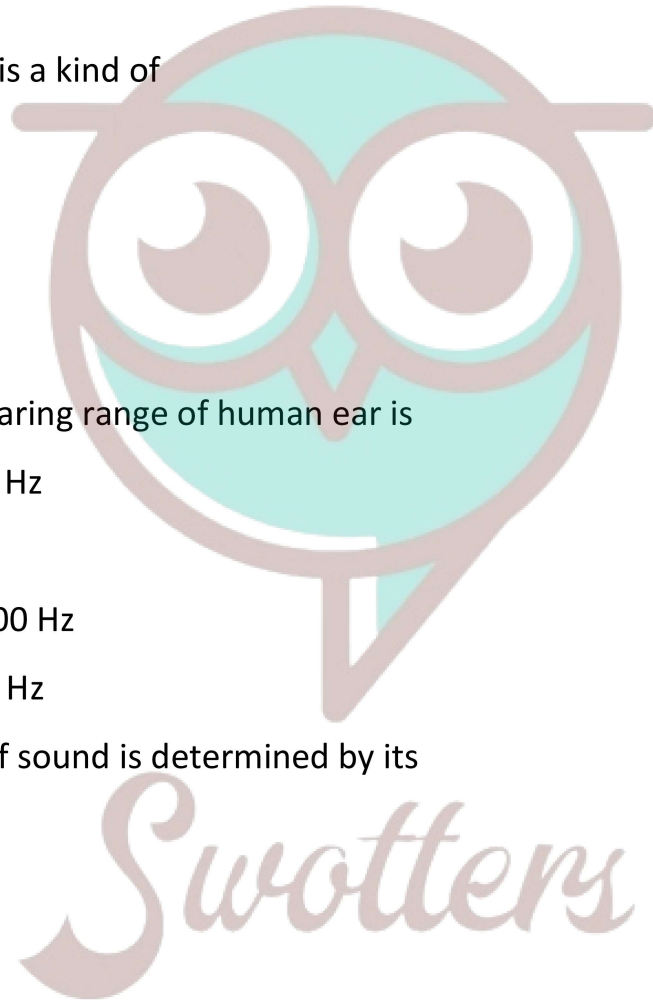
Question 4. Pitch of sound is determined by its

- (a) frequency
- (b) speed
- (c) amplitude
- (d) loudness

Question 5. The frequency of subsonic sound is

- (a) more than 20 Hz
- (b) 100 Hz
- (c) less than 20 Hz
- (d) more than 20,000 Hz

Question 6. Cochlea is a part of



- (a) hearing organ
- (b) sound producing organ
- (c) muscular organ
- (d) air pollution

Question 7. 1 hertz is equal to

- (a) 1 vibration per minute
- (b) 10 vibrations per minute
- (c) 60 vibrations per minute
- (d) 600 vibrations per minute

Question 8. Sound cannot travel through

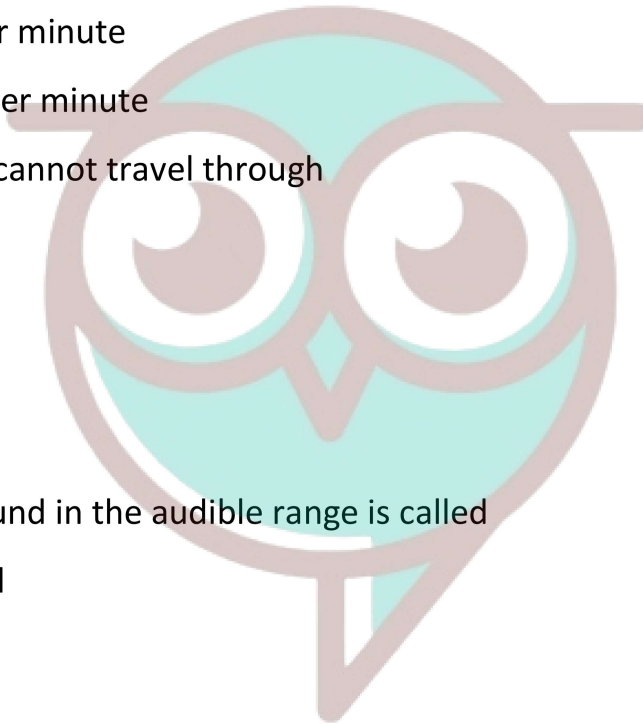
- (a) air
- (b) water
- (c) air
- (d) vacuum

Question 9. The sound in the audible range is called

- (a) ultrasonic sound
- (b) sonic sound
- (c) subsonic sound
- (d) light sound

Question 10. Speed is

- (a) $\frac{\text{Distance travelled}}{\text{Time}}$
- (b) $\frac{\text{Time}}{\text{Distance travelled}}$
- (c) Distance travelled \times Time
- (d) Time + Distance travelled



Swotters

Very Short Questions :

1. What is sound?
2. How is sound produced?
3. Do all bodies can produce sound?
4. What do you feel when you touch a sound producing school bell?
5. Touch the bell when it stops producing sound. Can you feel the vibrations?

6. What do you understand by this?
7. What do you understand by vibrations?
8. In some cases we cannot see vibrations explain why is it so?
9. What is amplitude?
10. Name a musical instrument which produces sound by air column.

Short Questions :

1. Discuss the importance of sound in our life.
2. How is sound produced?
3. How does sound travel from one place to another?
4. Why some sounds are louder than others?
5. Explain with an activity that vibrating object produces sound.
6. Vibrating objects produces sound; can we see the vibrations all the time?
7. What are vibrating parts of Veena and Tabla?
8. What are vibrating parts of Flute?
9. Name some musical instrument which are simply beaten or struck to produce melodious music.
10. How sound is produced from a guitar?

Long Questions :

1. State the differences between ultrasonic sound and infrasonic sound?
2. What are the methods to control noise pollution?
3. What is the property of vibration which determines the pitch of the sound?
4. Define frequency.
5. A string musical instrument was first plucked with a force of smaller magnitude and then with a force of greater magnitude. In which case would the instrument produce a louder sound?

ANSWER

MCQ Answer:

1. Answer: (c) larynx
2. Answer: (b) energy
3. Answer: (a) 20 Hz to 20,000 Hz
4. Answer: (a) frequency
5. Answer: (c) less than 20 Hz

6. Answer: (a) hearing organ
7. Answer: (c) 60 vibrations per minute
8. Answer: (d) vacuum
9. Answer: (b) sonic sound
10. Answer: (a) $\frac{\text{Distance travelled}}{\text{Time}}$
11. Answer: (c) 0.2 sec.
12. Answer: (c) amplitude
13. Answer: (a) frequency
14. Answer: (a) amplitude
15. Answer: (b) 340 m/sec.

Very Short Answer:

1. Answer: Sound is the medium by which we communicate with one another.
2. Answer: Sound is produced by vibrating bodies.
3. Answer: No, all bodies cannot produce sound.
4. Answer: We feel the vibrations in the bell.
5. Answer: No, we cannot feel vibrations.
6. Answer: We understand that only vibrating bodies can produce sound.
7. Answer: The back and forth motion of an object is called vibration.
8. Answer: When amplitude of vibrations is very small, then we cannot see them.
9. Answer: The maximum displacement of a vibrating body on one side is called amplitude.
10. Answer: Flute.

Short Answer :

1. Answer: Sound plays an important role in our life; Sound helps us to communicate with one another. Sound is so important because animals are able to hear events all around them, no matter where their attention is focused or not.
2. Answer: Sound is produced by the vibrations of a body and is transmitted through material media in pressure waves made up of alternate condensations (forcing of the molecules of the medium together) and rarefactions (pulling of the molecules of the medium away from one another).
3. Answer: Sound travels through a medium solid, liquid and gas. It cannot travel through vacuum.
4. Answer: The loudness of sound depends upon its amplitude. , larger the amplitude

of vibration the louder is the sound and vice versa.

5. Answer: Take metal dish pour water into it, strike its edge with a spoon, you will hear a sound, now again strike the edge of dish and look at the surface of water inside it, you will observe that vibrating dish producing sound along with wave in water. This shows that there is vibration in dish which is producing sound.
6. Answer: No, we cannot see the vibrations all the time as their amplitude is so small that we cannot see them rather we can feel them.
7. Answer: Vibrating part of Veena that produces sound is stretched string and Vibrating part of Tabla that produces sound is stretched membrane.
8. Answer: Vibrating part of Flute that produces sound is air column.
9. Answer: Manjira, ghatam, not and kartal are some of the instruments that which are simply beaten or struck to produce melodious music.
10. Answer: The string of the sitar is plucked it vibrate to produce sound, along with string other parts infact the whole instrument is forced to vibrate, and it is the sound of the vibration of the instrument that we hear.

Long Answer:

1. Answer:

Ultrasonic sound	Infrasonic sound
I. Sound of frequency higher than 20,000 Hz is called ultrasonic sound.	I. Sound of frequency lower than 20 Hz is called the infrasonic sound.
II. Animals like dog, bat, monkey, deer, etc., can hear ultrasonic sound.	II. Animals like whale, elephant, hippopotamus, giraffe, etc., can hear infrasonic sound.

2. Answer:

Following are the methods to control noise pollution:

- The noise pollution can be controlled by reducing the respective sources of noise pollution.
- The blowing of horns and speaker should be strictly avoided near schools and hospitals.
- More and more trees should be planted on the roadside because trees absorb sound.

3. Answer:

The frequency is the property which determines the shrillness or pitch of a sound. If the frequency of a sound is higher then we say that the sound has lower pitch.

4. Answer:

The number of oscillations completed by a vibrating body in one second is called frequency. The unit of frequency is hertz. It is denoted by Hz. If a vibrating body makes 20 oscillations in a second we say that its frequency is 20 Hz. The human voice can produce frequency between 60 Hz and 13,000 Hz. It is interesting that a human ear can hear sound of frequency between 20 Hz to 20,000 Hz.

A string musical instrument was first plucked with a force of smaller magnitude and then with a force of greater magnitude. In which case would the instrument produce a louder sound?

5. Answer:

The loudness of sound depends upon the amplitude of vibration. The amplitude of string is larger when it is plucked with greater force and hence the sound will be louder in that case.

