Sound and its Propagation

A. Choose the correct answer:

1. What is required for sound to travel?

(a) Light
(b) Medium (solid, liquid, or gas)
(c) Heat
(d) Electricity

2. In which medium does sound travel the fastest?

(a) Air
(b) Water
(c) Vacuum
(d) Solid

3. What part of the human body helps in producing sound?

(a) Lungs
(b) Tongue
(c) Vocal cords
(d) Ears

B. Fill in the Blanks:

1. Sound needs a _____ to travel.

2. Sound travels faster in _____ than in air.

3. The vibration of _____ produces sound in humans.

C. Case Study:

In a school experiment, students placed a clock under a glass jar and removed the air using a vacuum pump. As the air was removed, the ticking sound of the clock became fainter until it couldn't be heard at all.

Case Study Questions:

1. What was the purpose of this experiment?

2. Why did the ticking sound disappear when air was removed?

3. What conclusion can be drawn about the medium needed for sound to travel?

4. What does this experiment prove about sound propagation in a vacuum?

Short Answer Questions:

1. How is sound produced?
2. Why can’t sound travel through a vacuum?
3. What role do vibrations play in sound production?

Long Answer Questions:

1. Describe how sound travels through different mediums (solid, liquid, gas).
2. Explain the process of sound production in humans.
3. Discuss an activity or experiment that proves sound cannot travel through a vacuum.