

Sound

Chapter 7: Sound · Topic 1

Key Concept

An echo is the reflection of sound, requiring a minimum distance of about 17m from a reflecting surface, so the sound is heard as a distinct repetition.

Reverberation is the persistence of sound due to repeated reflections, useful in halls but needs control to avoid confusing overlapping sounds.

Resonance occurs when an object vibrates at its natural frequency due to being driven by a sound of matching frequency, amplifying the sound.

Understanding sound properties helps in designing auditoriums, musical instruments, and various sound-related technologies like sonar.

Quick Revision Notes

- An echo is reflected sound.
- Requires minimum ~17m distance from a surface.
- Reverberation: persistence via repeated reflections.
- It's useful in halls but needs control.
- Resonance: vibration at natural frequency, matching frequency source.
- This amplifies the sound.
- These concepts aid auditorium design.
- They're also used in sonar technology.

Practice Questions

- 1 Calculate the minimum distance needed to hear an echo.
- 2 Discuss the difference between echo and reverberation.
- 3 Explain resonance with a real-life example.
- 4 Research how sonar works using sound reflection.
- 5 Discuss why auditoriums need reverberation control.
- 6 Explain sound reflection concepts in your own words.