

The Science of Sound and Music Perception

Music Appreciation · Answer Key · 5 Questions

1. How is the perceived pitch of a musical note primarily determined?

- A) By its amplitude
- B) By its wavelength
- C) By its frequency**
- D) By its timbre

2. What scientific characteristic primarily distinguishes the sound of a flute from a clarinet when both play the same note at the same loudness?

- A) Their fundamental frequency
- B) Their amplitude envelope
- C) Their overtone series (harmonic content)**
- D) Their vibrato rate

3. The human perception of loudness is logarithmically related to sound intensity. What unit is used to measure sound intensity level, reflecting this logarithmic scale?

- A) Hertz (Hz)
- B) Decibel (dB)**
- C) Pascal (Pa)
- D) Joule (J)

4. When a vibrating object causes another object to vibrate at its natural frequency, leading to an increase in amplitude, this phenomenon is known as:

- A) Refraction
- B) Diffraction
- C) Interference
- D) Resonance**

5. The perception of consonance and dissonance in music is partially explained by the concept of 'critical bands' in human hearing. What happens when two tones fall within the same critical band and are very close in frequency?

- A) They are perceived as separate, distinct pitches.
- B) They produce beats or a rough, dissonant sensation.**
- C) Their combined loudness significantly decreases.
- D) They perfectly cancel each other out.