

Sounds of Music Quiz Answer Key  
by Anna Sohn

1. Define sound. (1)

*Sound is a form of energy carried by waves of vibrating particles.*

2. What kind of waves are sound waves? (1)

- a. Transverse
- b. Longitudinal

3. Why does the graph of a sound wave look wavy when sound waves aren't actually wavy in the form represented on the graph of a sound wave? (3)

*Since the graph of a sound wave shows the pressure of the particles relative to the time, and since the pressure fluctuates over normal then under normal then back again in a cyclic repeating pattern, the graph looks wavy. The graph of a sound wave represents pressure of the particles relative to time; not the actual wavy pattern of the sound wave.*

4. Define acoustics. (2)

*The properties of a building or room that determines the quality or timbre of the sound transmitted in it.*

5. Explain why sound travels more quickly in solids than in gases. (1.5)

*The particles in solids are closer together than in gases, so the energy transfer is slightly quicker in solids than in gases.*

6. What is the speed of sound in air? (1)

*340.29 m/s or 34029 cm/s*

Match. (4)

5. b Aerophones

6. d Membranophones

7. c Chordophones

8. a Idiophones

a. Sound is produced by the instrument itself vibrating

b. Sound is produced by vibrating air columns

c. Sound is produced by vibrating strings, usually has a resonator

d. Sound is produced by vibration of a stretched membrane over a resonator

9. Define timbre. (1.5)

*Timbre is the quality of a sound; the component of a tone that causes different instruments to sound different from each other while they both play the same note.*

10. What are harmonics? (3)

*Harmonics are overtones of fundamental frequencies at fixed intervals or multiples.*

11. What range of sound frequencies are audible to humans? (2)

- a. 20 to 20000 Hz
- b. 30 to 1000 dB
- c. 200 to 40500 Hz
- d. 100 to 20000 Hz

12. Explain how your instrument makes sound. (5)

*Answers will vary.*

13. Explain how you play or how you made your instrument affects pitch. (5)

*Answers will vary.*

14. Explain how you play or how you made your instrument affects amplitude. (5)

*Answers will vary.*

15. Explain how you play or how you made your instrument could affect the timbre of your instrument. (7)

*Answers will vary.*