

Concept Items

13.1 Types of Waves 1.

Do water waves push water from one place to another? Explain.

- a. No, water waves transfer only energy from one place to another.
- b. Yes, water waves transfer water from one place to another.

2.

With reference to waves, what is a trough?

- a. the lowermost position of a wave
- b. the uppermost position of a wave
- c. the final position of a wave
- d. the initial position of the wave

3.

Give an example of longitudinal waves.

- a. light waves
- b. water waves in a lake
- c. sound waves in air
- d. seismic waves in Earth's surface

4.

What does the speed of a mechanical wave depend on?

- a. the properties of the material through which it travels
- b. the shape of the material through which it travels
- c. the size of the material through which it travels
- d. the color of the material through which it travels

13.2 Wave Properties: Speed, Amplitude, Frequency, and Period 5.

Which characteristic of a transverse wave is measured along the direction of propagation?

- a. The amplitude of a transverse wave is measured along the direction of propagation.
- b. The amplitude and the wavelength of a transverse wave are measured along the direction of propagation.
- c. The wavelength of a transverse wave is measured along the direction of propagation.
- d. The displacement of the particles of the medium in a transverse wave is measured along the direction of propagation.

6.

Which kind of seismic waves cannot travel through liquid?

- a. compressional waves
- b. P-waves
- c. longitudinal waves
- d. S-waves

7.

What is the period of a wave?

- a. the time that a wave takes to complete a half cycle
- b. the time that a wave takes to complete one cycle
- c. the time that a wave takes to complete two cycles
- d. the time that a wave takes to complete four cycles

8.

When the period of a wave increases, what happens to its frequency?

- a. Its frequency decreases.
- b. Its frequency increases.
- c. Its frequency remains the same.

13.3 Wave Interaction: Superposition and Interference 9.

Is this statement true or false? The amplitudes of waves add up only if they are propagating in the same line.

- a. True
- b. False

10.

Why is sound from a stereo louder in one part of the room and softer in another?

- a. Sound is louder in parts of the room where the density is greatest. Sound is softer in parts of the room where density is smallest.
- b. Sound is louder in parts of the room where the density is smallest. Sound is softer in parts of the room where density is greatest.
- c. Sound is louder in parts of the room where constructive interference occurs and softer in parts where destructive interference occurs.
- d. Sound is louder in parts of the room where destructive interference occurs and softer in parts where constructive interference occurs.

11.

In standing waves on a string, what does the frequency depend on?

- a. The frequency depends on the propagation speed and the density of the string.
- b. The frequency depends on the propagation speed and the length of the string.
- c. The frequency depends on the density and the length of the string.

- d. The frequency depends on the propagation speed, the density, and the length of the string.

12.

Is the following statement true or false? Refraction is useful in fiber optic cables for transmitting signals.

- a. False
- b. True

13.

What is refraction?

- a. Refraction is the phenomenon in which waves change their path of propagation at the interface of two media with different densities.
- b. Refraction is the phenomenon in which waves change their path of propagation at the interface of two media with the same density.
- c. Refraction is the phenomenon in which waves become non-periodic at the boundary of two media with different densities.
- d. Refraction is the phenomenon in which waves become non-periodic at the boundary of two media with the same density.