

Name: _____

Date: _____

1. The distance between a wave's crest and its trough is known as its

- A. low tide measurement.
 - B. water depth.
 - C. wave height.
 - D. wave length.
-

2.

All waves transmit

- A. energy.
 - B. mass.
 - C. matter.
 - D. radiation.
-

3.

Which of these is one way that mechanical waves differ from electromagnetic waves?

- A. Mechanical waves require energy and electromagnetic waves do not.
 - B. Mechanical waves require a medium and electromagnetic waves do not.
 - C. Electromagnetic waves require a medium and mechanical waves do not.
 - D. Mechanical waves transmit matter and electromagnetic waves transmit energy.
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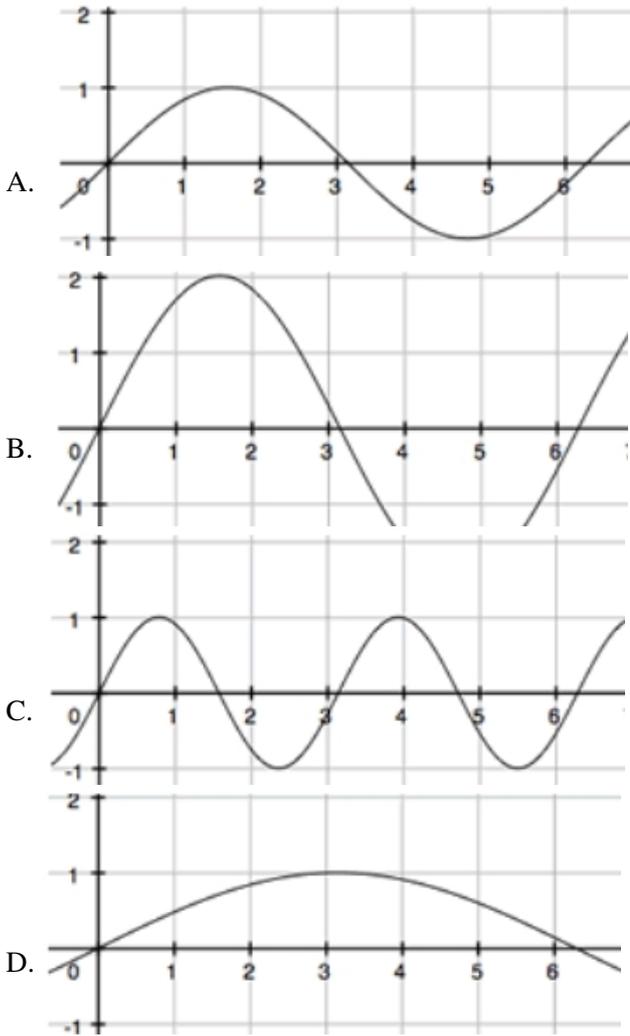
4.

Electromagnetic waves and mechanical waves are alike and different. What is one way in which these waves are similar?

- A. Both types of waves require a medium.
 - B. Both types of waves have a frequency.
 - C. Both types of waves transmit matter.
 - D. Both types of waves have a pitch.
-

5.

Assume waves A, B, C, and D, illustrated above, each represent a different wave of the electromagnetic spectrum. Which wave would MOST likely cause be energetic enough to damage living human cells?



6.

You are sitting on the edge of a pool with your legs in the water. As light waves pass from the pool into the air, it looks like your legs are not attached at the knees where they meet the water. This is because light waves _____ when they pass from one medium to another.

- A. are amplified
- B. diffract
- C. reflect
- D. refract

7.

There are two basic finishes to most paper, glossy and matte. A glossy finish is used to produce a higher finish quality, for instance the cover of a magazine. A matte finish is used to produce a softer finish with less glare, for instance your notebook paper. If you were to compare both of these surfaces under a high-powered microscope, how would they differ?

- A. The matte surface would be much rougher.
 - B. The glossy surface would contain more fibers of white paper.
 - C. The glossy surface would be still, while the matte surface would appear to move slightly.
 - D. The matte surface would be solid, while the glossy surface would appear to have small holes.
-

8.

You can see your image in a shiny, flat surface because light waves bounce directly back at you and your eyes. This is an example of

- A. diffraction.
 - B. reflection.
 - C. refraction.
 - D. transparency.
-

9.

It was a cold, sunny day and the ground was covered with fresh snow. Maria wore her black sweatshirt outside to play in the snow. She knew that black would _____ light waves and help keep her warm.

- A. absorb
 - B. diffract
 - C. reflect
 - D. refract
-

10.

As light waves pass through openings in a barrier or around the edges of an object, the waves change direction or

- A. are absorbed.
 - B. diffract.
 - C. reflect.
 - D. refract.
-

11. Which of the following would reflect rather than refract light?

- A. Magnifying glass
- B. Mirror
- C. Prism
- D. Lens

12.

You can observe the color of your friend's shirt with your eyes because

- A. the shirt produces light waves.
 - B. the shirt releases light waves.
 - C. light is reflected off of the shirt.
 - D. light is transmitted from the shirt.
-

13.

Green plants look "green" because they

- A. transmit green light.
 - B. reflect green wavelengths of the visible spectrum.
 - C. absorb green wavelengths of the visible spectrum.
 - D. reflect blue and yellow wavelengths of the visible spectrum.
-

14.

Lenny is looking at a sheet of paper that reflects all wavelengths of the visible spectrum that hit it. Lenny is looking at a sheet of paper that appears to be

- A. black.
 - B. violet.
 - C. red.
 - D. white.
-

15.

Why does the human eye observe the different colors of a rainbow?

- A. White light is broken down in the eye into its separate colors.
 - B. Different colors of light travel at different speeds to the eye.
 - C. The eye sees different wavelengths of light as different colors.
 - D. The eye sees different colors of light in different locations of the eye.
-

16. Josie sees lightning off in the distance. A few seconds later she hears thunder. What can Josie conclude?

- A. Sound waves do not travel long distances.
 - B. Light waves travel faster than sound waves.
 - C. Sound waves are weaker than light waves.
 - D. Light waves last longer than sound waves.
-

17. Mariam's mother had an ultrasound to see the baby growing inside of her. Which statement explains how ultrasound works?

- A. A special cream is heated and placed on her mother's stomach area, which produces an image on a computer.
 - B. A fluorescent light is used to transmit light waves into her mother's body, which produce an image on a computer.
 - C. Sound waves are sent into her mother's body, which reflect off of the baby and produce an image on a computer.
 - D. A type of medicine is injected into her mother, which causes an image of the baby to be produced on a computer.
-

18.

The speed of a sound wave depends MOSTLY on

- A. the amplitude of the wave.
 - B. the frequency of the wave.
 - C. the angle at which it approaches the listener.
 - D. the medium through which the wave travels.
-

19.

Imagine a ringing bell set inside a sealed glass jar. Once all the air is removed and a vacuum is created, the ringing sound is no longer heard. Explain why this happens.

- A. The glass prevents any sound from escaping.
 - B. The lack of air in the jar causes the ringing to stop.
 - C. Without air, the sound waves cannot travel to the ear.
 - D. The pressure of the outside air causes the sound to remain within the jar.
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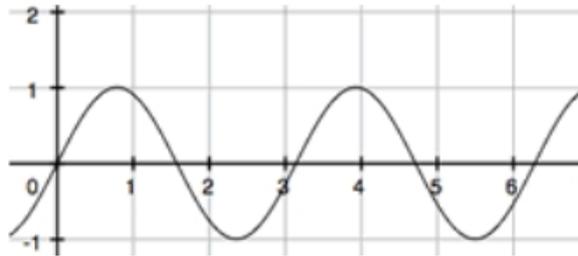
20.

Sound waves are transmitted fastest through

- A. air.
- B. liquids.
- C. solids.
- D. a vacuum.

Answer Key

1. C) wave height.
2. A) energy.
3. B) Mechanical waves require a medium and electromagnetic waves do not.
4. B) Both types of waves have a frequency.



5. C)
6. D) refract
7. A) The matte surface would be much rougher.
8. B) reflection.
9. A) absorb
10. B) diffract.
11. B) Mirror
12. C) light is reflected off of the shirt.
13. B) reflect green wavelengths of the visible spectrum.
14. D) white.
15. C) The eye sees different wavelengths of light as different colors.
16. B) Light waves travel faster than sound waves.
17. C) Sound waves are sent into her mother's body, which reflect off of the baby and produce an image on a computer.
18. D) the medium through which the wave travels.
19. C) Without air, the sound waves cannot travel to the ear.
20. C) solids.