

2017 EOU - Waves

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- _____ 1. A beam of light emerges from water into air at an angle. The beam is bent
- not at all.
 - 48 degrees upward.
 - away from the normal.
 - 96 degrees upward.
 - towards the normal.
- _____ 2. The distance between successive identical parts of a wave is called its
- velocity.
 - frequency.
 - period.
 - wavelength.
 - amplitude.
- _____ 3. The amplitude of a particular wave is 1.0 m. The top-to-bottom distance of the disturbance is
- 1.0 m.
 - 2.0 m.
 - 0.5 m.
 - none of the above
- _____ 4. Destructive interference occurs when
- two waves of the same color overlap.
 - the crest of one wave meets the trough of another wave.
 - the crests of two waves overlap.
 - all of the above
 - none of the above
- _____ 5. You dip your finger repeatedly into water and make waves. If you dip your finger more frequently, the wavelength of the waves
- lengthens.
 - shortens.
 - stays the same.
- _____ 6. Different colors of light travel at different speeds in a transparent medium. In a vacuum, different colors of light travel at
- the same speed.
 - different speeds.
- _____ 7. Radio waves travel at the speed of light, 300,000 km/s. The wavelength of a radio wave received at 200 megahertz is
- 15 m.
 - 1.5 m.
 - 6.7 m.
 - 0.7 m.

- _____ 8. The Doppler effect is the change in observed frequency due to
- the type of wave.
 - the original frequency of the source.
 - the motion of the source or observer.
 - the type of medium the wave is in.
 - all of the above
- _____ 9. A skipper on a boat notices wave crests passing the anchor chain every 2.0 seconds. The skipper estimates the distance between crests at 10.0 m. What is the speed of the water waves?
- 2.0 m/s
 - 10.0 m/s
 - 5.0 m/s
 - not enough information given
- _____ 10. The law of reflection says that
- the angle a ray is reflected from a mirror is random.
 - waves incident on a mirror are partially reflected.
 - all waves incident on a mirror are reflected.
 - the angle of reflection from a mirror equals the angle of incidence.
- _____ 11. A longitudinal wave lacks which of the following properties?
- wavelength.
 - speed.
 - amplitude.
 - frequency.
 - A longitudinal wave has all of the above.
- _____ 12. A certain ocean wave has a frequency of 0.08 hertz and a wavelength of 10 meters. What is the wave's speed?
- 1.0 m/s
 - 10 m/s
 - 125 m/s
 - 0.80 m/s
 - 0.08 m/s
- _____ 13. It is difficult to see the roadway from a car on a rainy night because the road surface
- absorbs the light more when wet.
 - that is normally a diffuse reflector when dry becomes a mirror surface when wet.
 - is obscured by the rain itself.
 - scatters light in all directions.
- _____ 14. When a wave passes through an opening, some of the wave is bent. This phenomenon is called
- refraction.
 - polarization.
 - diffraction.
 - interference.
 - reflection.
- _____ 15. A wave travels an average distance of 10 meters in 1 second. What is the wave's velocity?
- Less than 0.1 m/s
 - 1 m/s
 - 5 m/s
 - 10 m/s
 - More than 10 m/s

- ___ 16. Colors seen when gasoline forms a thin film on water are a demonstration of
 - a. diffraction.
 - b. interference.
 - c. dispersion.
 - d. refraction.
 - e. polarization.

- ___ 17. As the sound of a car's horn passes and recedes from you, the pitch of the horn seems to
 - a. decrease.
 - b. increase.
 - c. stay the same.

- ___ 18. Refraction is caused by
 - a. more than one reflection.
 - b. bending.
 - c. different wave speeds.
 - d. displaced images.

- ___ 19. A wave created by shaking a rope up and down is called a
 - a. Doppler wave.
 - b. standing wave.
 - c. transverse wave.
 - d. constructive wave.
 - e. longitudinal wave.

- ___ 20. The time needed for a wave to make one complete cycle is its
 - a. velocity.
 - b. period.
 - c. wavelength.
 - d. amplitude.
 - e. frequency.