Vibrations and Waves Review 1

1. What is the source of all waves?

2. What is the frequency in vibrations per second of a 100-Hz wave?

3. The Sears Tower (Willis Tower) in Chicago sways back and forth at a frequency of about 0.1 Hz. What is its period of vibration?

4. How does a wave transfer energy?

5. If a water wave vibrates up and down two times each second and the distance between wave crests is 1.5 m, what is the frequency of the wave? What is its wavelength? What is its speed?

6. How do you calculate the speed of a wave?

7. What are some examples of transverse waves?

8. What is an example of a longitudinal wave?

9. What causes interference patterns?

10. Is it possible for one wave to cancel another wave so that the combined amplitude is zero? Explain your answer.

11. When a source moves toward you, do you measure an increase, decrease, or neither in wave speed?

12. How does the apparent frequency of waves change as a wave source moves?

Multiple Choice

1. The time it takes for a pendulum to swing to and fro is considered its
   a. frequency.
   b. period.
   c. wavelength.
   d. amplitude.

2. The frequency of a wave is the inverse of its
   a. frequency.
   b. period.
   c. wavelength.
   d. amplitude

3. A wave transfers
   a. amplitude.
   b. wavelength.
   c. frequency.
   d. energy.

4. The speed of a wave can be found by multiplying its frequency by the
   a. period.
   b. wavelength.
   c. amplitude.
   d. density of the medium that carries the wave.

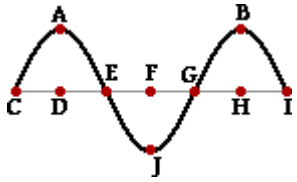
5. The vibrations along a transverse wave move in a direction
   a. along the wave in the same direction.
   b. perpendicular to the wave.
   c. parallel to the wave.
   d. along the wave in the opposite direction.

6. The vibrations along a longitudinal wave move in a direction
   a. along and parallel to the wave.
   b. perpendicular to the wave.
   c. below the wave.
   d. above the wave.

7. A single disturbance that moves from point to point through a medium is called a ___.

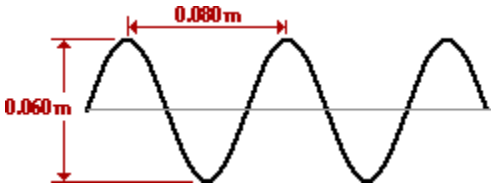
   a. period b. periodic wave c. wavelength d. pulse

8. A transverse wave is traveling through a medium. See diagram below. The particles of the medium are vibrating ___

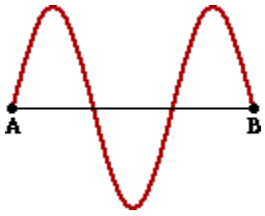


   a. parallel to the line joining AD.
   b. along the line joining CI.
   c. perpendicular to the line joining AD.
   d. at various angles to the line CI.
   e. along the curve CAEJGBI.

9. What is the amplitude of the wave in the diagram below?



   a. 0.03 m. b. 0.04 m. c. 0.05 m. d. 0.06 m.



10. How many complete waves are shown in the diagram?

    a. 1 b. 2 c. 3 d. 1.5

11. If the distance from point A to point B in the diagram is 60 cm, then the wavelength is ____.

    a. 20 cm. b. 40 cm. c. 60 cm. d. 90 cm.