

**Vasquez High School -- Physical Science -- Spring '15 Quest #1 -- Chapter 9 -- 65 points**

Write TRUE if the statement is true OR write the word that substitutes for the underlined word that would make it true. Writing false only earns partial credit. Three points each.

- \_\_\_\_\_ 1) The bending of light waves because their speed changes going through water as opposed to air is a phenomenon known as diffraction.
- \_\_\_\_\_ 2) The process by which one object absorbs energy from another at the same frequency is called resonance.
- \_\_\_\_\_ 3) The places in a standing wave where the waves do not appear to move are called echoes.
- \_\_\_\_\_ 4) The amplitude of a wave its related to its energy.
- \_\_\_\_\_ 5) We measure the frequency of a sound in meters.
- \_\_\_\_\_ 6) Sound waves can be characterized as longitudinal waves.
- \_\_\_\_\_ 7) A strobe light blinks 5 times a second. Its period is 5 seconds.

Short Answer/Fill-in. Be clear and complete. If it is too sloppy to read, you get nada. Three points.

- 8) A wave is a \_\_\_\_\_ disturbance that transfers \_\_\_\_\_ thru a \_\_\_\_\_.
- 9) \_\_\_\_\_ is the number of waves that pass a certain point every second.
- 10) What causes the “dead” spots in a place like a gymnasium when you listen to a concert there? \_\_\_\_\_  
\_\_\_\_\_.
- 11) The areas of a sound wave where the waves are close together are areas of \_\_\_\_\_  
and the area where the waves are spread apart are areas of \_\_\_\_\_.
- 12) If you were to grab for a fish under the water, would you grab where you see it? Yes or No. Why or why not? \_\_\_\_\_
- 13) What is the equation for finding the speed of a wave? \_\_\_\_\_
- 14) What occurs when two waves overlap? \_\_\_\_\_  
\_\_\_\_\_.
- 15) Multiple Choice. If the frequency of a wave increases and its speed remains the same, how does its wavelength change? Three points. Circle the answer.
- a) It decreases      b) It increases      c) It remains the same      d) It depends on the speed

Calculation Section. Be sure to write the equation you need in its proper form. Five points each.

- 16) In a swimming pool, there is an annoying little boy at the end of the pool making waves. If the waves arrive at you at a frequency of 4 waves per second and you measure the wavelength of each wave to be 0.35 meters, what is the speed of the waves?
- 17) You go to a concert. As the guitarist is tuning up, he plays a middle A at 440 Hz. If sound travels at 345 m/s, what is the wavelength of the sound?
- 18) What is the frequency of orange light whose wavelength is  $5.80 \times 10^{-7}$  m. Hope you remembered the speed of light.
- 19) Make a diagram of two or three cycles of a typical transverse wave. Show its amplitude, wavelength, crest and trough. Five points.