

Name _____ Date _____ Period _____

Chapter 25 Concept Review

CONCEPTUAL PHYSICS: WAVES

Directions: Answer the following questions using your notes and textbook

1. _____ - a “wiggle in time”
2. Light and sound are both forms of energy that move through space as _____
3. Galileo discovered time a pendulum takes to swing back and forth does not depend on _____ of pendulum
4. _____ - time it takes to swing back and forth one time
5. Simple _____ motion- often called oscillatory motion, is the back-and-forth vibratory motion of a swinging pendulum
6. Wave terms
 1. _____ - high points of wave
 2. _____ - low points of wave
 3. _____ - distance from the midpoint to crest (or trough) of a wave.
 4. _____ - distance from top of one crest to top of the next crest
 5. _____ - how often a vibration occurs (usually number/second. Measured in Hertz (cycles/second)
7. . Frequency of vibrating object and frequency of wave it produces are the _____
8. Can calculate the period of vibrating object if _____ is known (and vice versa)
9. Light is energy that travels as _____
10. The energy transferred from a vibrating source is carried by a disturbance in a _____, not by the matter moving from one place to another within the medium
11. Speed of wave depends on _____ it moves through
12. Whatever medium, speed, wavelengths, and frequency of wave are _____.

13. $v = \lambda f$

a. $v =$

b. $\lambda =$

c. $f =$

14. Transverse wave- motion of medium is at _____ to the direction in which the wave travels.

15. _____ waves- particles move along the direction of the wave rather than at right angles to it.

16. Wave interference- when more than one vibration or wave exists at the same _____

in the same _____ - they effect each other (increased, decreased, or neutralized)

17. _____ interference- when one crest of one wave overlaps the crest of another. Effects add together

18. _____ interference- when crest of one wave and trough of another, individual effects are reduced.

19. _____ effect- the apparent change in frequency due to the motion of the source (or receiver)

20. The greater the _____ of the source, the greater will be the Doppler effect

21. When source is traveling towards you the waves velocity is _____, thus its frequency will be greater

22. When source is traveling away from you the _____ of the wave hitting your ear will be less, therefore the frequency will be smaller

23. Doppler effect and light

a. Approaching light increases its measured frequency. An increase is called a _____ shift (blue is toward high-frequency end of color spectrum)

b. When it recedes, there is a decrease in frequency called _____-shift (referring to the low-frequency, or red, end of the color spectrum)

24. _____ wave- When wave source is greater than the wave speed. Produces a V-shape

25. _____ Wave- a three dimensional bow wave. Can produce a _____ boom (compressed air that sweeps behind a supersonic aircraft)