Wave Practice Test

#1-7 Choose the best answer from the following list:

Amplitude	Wavelength	Wave speed	Trough
Period	Frequency	Crest	Medium

1. The highest point of a transverse wave is the _____.
2. The lowest point of a transverse wave is the _____.
3. Half the distance between the high point and the low point of a transverse wave.
4. The amount of time that is takes for a wave to pass a certain point is the _____.
5. The distance between the crests on two successive identical waves is the _____.
6. If you multiply the frequency of a wave times it's wavelength you get the _____.
7. The number of vibrations that occur in one second is the _____.
8. The substance that a mechanical wave travels through is the _____.

#9-15 Choose the best answer from the following list:

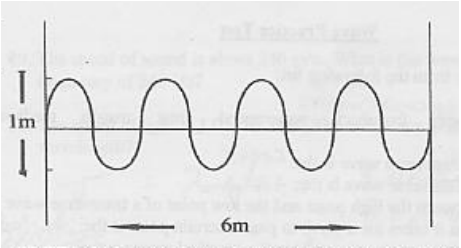
Longitudinal wave	Sound wave	Light wave	Water wave
Transverse wave	Seismic wave	Mechanical wave	

9. 186,000 miles per second (3.0×10^8 m/s) is the speed of _____.
10. The wave that travels through rocks and other materials inside the earth.
11. The sine curve is a good mathematical model for representing a _____.
12. The molecules of the medium move in a circular pattern in a _____.
13. Water waves, seismic waves and sound waves are all examples of _____.
14. If Waves that cause the particles in a medium to vibrate parallel to the direction of the wave motion are _____.
15. Mechanical, longitudinal waves that may travel through air are _____.

#16-22 Choose the best answer from the following list:

Reflection	Interference	Energy	Refraction
Diffraction	Doppler Effect	Vibration	

16. If a wave has bigger amplitude, then it carries more _____.
17. When two waves exist in the same place and combine when they meet, this is _____.
18. The cause of most waves is _____.
19. When waves bounce off a surface, this is _____.
20. The bending of waves as they pass an edge or corner is _____.
21. The bending of waves as they pass from one medium to another is _____.
22. The observed change in the frequency of a wave when the source or observer is moving is the _____.



23. What is the wavelength shown in the above diagram?
24. What is the amplitude of the wave shown above?
25. If all of the waves shown above travel the distance shown in 2 seconds, what is the wave frequency?
26. Which of the following wave types require a medium (circle all that apply)?
    light sound electromagnetic seismic mechanical

27. Which of the following are electromagnetic waves (circle all that apply)?
    light sound x-rays mechanical water radio
28. The frequency of the light waves determines the:
    a. speed b. color c. medium d. amplitude e. volume
29. The pitch of a sound wave is determined by its:
    a. Wavelength b. Frequency c. Amplitude d. wave speed e. volume
30. The amplitude of a sound wave determines its:
    a. Volume b. pitch c. medium d. speed e. sine curve
31. The difference between visible light, X rays and radio waves is the:
    a. Amplitude b. wavelength c. speed d. medium e. intensity
32. Waves transport:
    a. Matterb. space c. energy d. speed e. all of these
33. Another name for light waves is:
    a. sound waves
    b. electromagnetic waves
    c. seismic waves
    d. mechanical waves
    e. all of these
34. Light waves do not require a(n):
    a. liquid
    b. medium
    c. solid
    d. gas
    e. all of these
35. If a stone is dropped into a pond to create waves, the medium is the:
    a. water b. stone c. air d. amplitude e. light
36. For which type of waves do particles in the medium vibrate perpendicularly to the direction in which the waves are traveling?
    a. P waves b. longitudinal waves c light waves d .transverse waves
37. The speed of a sound wave is affected by the:
    a. wavelength b. medium c. frequency d. interference e. amplitude
38. The number of waves or vibrations per second is the ___ and it is measured in__.
39. Describe the difference between x-rays and visible light waves…
40. How would you determine the frequency of a wave that has a speed of y per second and a length of x meters?
41. If you want to know the speed of a wave, what equation should you use?

<u>Applying math skills</u>

42. A tuning fork has a frequency of 260 hertz and the wavelength of the sound produced is 2.0 meters. What is its velocity?
43. A wave has a period of .5 second. The frequency of this wave is:
44. A man is standing on the shore of a beach, up to his knees in water. Every 10 second produced in 2.0 meters. What is its velocity?
45. A child is sending pulses down a stretched rope at a rate of 4 per second. The distance between the pulses is 5 meters. What is the speed of the wave?
46. A train of waves is moving at a speed of 20 m/s. The frequency of the waves is 5 Hz. What is the wavelength?
47. A person floating is an inner tube counts off 5 seconds between consecutive crests in ocean waves. What is the frequency of the ocean waves?
48. The average wavelength in a series of ocean waves is 10.0 m. A wave arrives every 5 seconds. What is the average speed of the waves?
49. The speed of sound is about 340 m/s. What is the wavelength of a sound wave with a frequency of 240 Hz?
50. The speed of light is 3.0×10^8 m/s. The frequency of green light is 5.8×10^{14}. What is its wavelength?