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| 1) Define wave. | Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour \_\_\_\_\_\_  Final Study Guide |
| 2) Draw a picture of a transverse wave. Label the following – crest, amplitude, wavelength, and trough. |  |
| 3) Draw a picture of a compressional wave. |  |
| 4) Define the following – wavelength, frequency, amplitude, crest, and trough. |  |
| 5) List all of the waves in the electromagnetic spectrum. (Be sure to list all the colors in visible light) |  |
| 6) What is a medium? |  |
| 7) Describe the two types of mechanical waves. GIVE EXAMPLES OF EACH. |  |
| 8) What is the difference between reflection and refraction? |  |
| 9) Describe the two types  of wave interference. |  |
|  | |
| 10) Describe the relationship between wavelength and frequency. (What happens to one when the other is increased and decreased).  Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour \_\_\_\_\_\_  Waves, Sound, and Light Study Guide |  |
| 11) What are sound waves produced by? |  |
| 12) Why can astronauts only communicate by radio when working on the moon? |  |
| 13) What is the difference between music and noise? |  |
| 14) What is resonance? |  |
| 15) What is used to measure the intensity of sound? |  |
| 16) What causes echoes? |  |
| 17) Describe the Doppler Effect? |  |
| 18) What is reverberation? |  |
| 20) What produces electromagnetic waves? |  |
| 21) What has the longest and shortest wavelength in the electromagnetic spectrum? |  |
| 22) List 4 uses of each electromagnetic wave. |  |
| 23) What is a light ray? |  |
| 24) Why do objects have color? |  |
| 25) What are the three primary colors? |  |
| 26) What are the three primary color pigments? |  |
| 27) What does the law of reflection state? |  |
| 31) What is the difference between concave and convex mirrors? |  |
| 32) What is the speed of light in empty space? |  |
| 33) Sound waves are \_\_\_\_\_\_\_\_\_\_\_\_ waves. |  |
| 34) The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a wave is the distance between a point on one wave and the identical point on the next wave. |  |
| 3) For a 35) In general, the more energy a wave has the greater its \_\_\_\_\_\_\_\_\_\_\_\_\_. |  |
| 36) The speed of light depends on the \_\_\_\_\_\_\_\_\_\_ it travels through. |  |
| 37) Light waves do not need a \_\_\_\_\_\_\_\_\_\_\_\_ to travel through. |  |
| 38) When light strikes a transparent material, most of the light is \_\_\_\_\_\_\_\_\_\_\_\_. |  |
| 39) Paper does not reflect light very well because its surface is \_\_\_\_\_\_\_\_\_\_\_\_.. |  |
| 40) A \_\_\_\_\_\_\_\_\_\_\_\_ lens is a diverging lens. |  |
| 41) An \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_can make a light beam travel in a path that is curved or twisted. |  |
| 42) A place where molecules are far apart is a \_\_\_\_\_\_\_\_\_\_\_\_\_. |  |
| 43) When light bounces off a surface it is called\_\_\_\_. |  |
| 44) To produce sound an object must be \_\_\_\_\_\_\_\_\_\_\_\_ |  |
| 45) |  |
| 46) Sound travels fastest in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |  |
| 47) The speed of sound in wood is \_\_\_\_\_\_\_\_\_\_\_\_\_\_ than in a liquid. |  |
| 48) The number of waves that pass a certain point in one second is the wave's  \_\_\_\_\_\_\_\_\_\_\_\_\_\_. |  |
| 49) Sunscreen protects the skin from damage caused by\_\_\_\_\_\_\_\_\_\_\_\_ . |  |
| 50) The longest wavelength in the electromagnetic spectrum is the \_\_\_\_\_. |  |
| 51) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are used for medical imaging |  |
| 52) Your body needs \_\_\_ to make vitamin D. |  |
| 53) The material in which a wave travels is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |  |
| 54) Glass is an example of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ material. |  |
| 55) **If an object looks**  **Blue it reflects**  **\_\_\_\_\_\_ light.** |  |
| 56) If light waves change speed when they pass from one medium into another, the light will be \_\_\_\_\_\_\_\_\_\_\_\_\_\_. |  |
| 57) \_\_\_\_\_\_\_\_\_\_\_\_does not require a medium to travel through |  |
| 58) light waves and water waves are examples of this type of wave. |  |
| 59) interaction of various different waves |  |
| 60)\_\_\_\_\_\_\_\_\_\_\_\_ can be either transverse or  Compressional |  |
| 61) sound waves are an example of this type of wave |  |
| 62) this wave property is related to the energy of a wave |  |
| 63) the changing of the speed of a wave |  |
| 39. the spreading out of waves around a  barrier |  |
| 64) Draw a Convex lens |  |
| 65) Draw a Concave lens |  |
| 66) Draw a Plane Mirror |  |
| 67) Draw a Concave mirror |  |
| 68) This produces an upright, reversed image |  |
| 69) Since sound is a mechanical wave it  needs a \_\_\_ to travel through. |  |
| 70) Waves that do not require matter to  transfer energy are \_\_\_\_ waves. |  |
| 71) The less dense area of a compressional wave is called a(n) |  |
| 72) Sound travels faster in \_\_ than in liquids. |  |
| 73) The echo of a sound wave is due to\_\_\_\_\_\_\_\_of the sound wave. |  |
| 74) When two waves interact and their amplitudes cancel out, \_\_\_interference  Has occurred. |  |
| 75) The \_\_\_\_ of a sound is how  high or low it sounds. |  |
| 76) A reflected sound wave is called a(n) . |  |
| 77) When one object causes a second  object to resonate, the second object has absorbed \_\_\_  from the first. |  |
| 78) A wave transfers \_\_\_ from one place to another without transferring  matter. |  |
| 79) The entire range of electromagnetic frequencies is called \_\_\_. |  |
| 80) The higher the frequency of an electromagnetic wave, the \_\_\_ energy it has. |  |
| 81) The reflection of light waves from a rough surface is \_\_ reflection |  |
| 82) Describe why you could not hear someone talk if you were both on the surface of the Moon. |  |
| 83) A pencil is placed in a bucket of water, hi some views, the pencil in the water will look bent when compared to the pencil above the water. Why is this so? |  |
| 84) Describe resonance |  |
| 85) Explain the difference between opaque, transparent, and translucent materials and given an example of each. |  |
| 86) As your vocal cords become thinner, the pitch becomes \_\_\_\_\_\_\_\_\_\_\_\_. |  |
| 87) Bats use \_\_\_\_\_\_\_\_\_\_\_\_ to locate insects |  |
| 88) \_\_\_\_\_\_\_\_\_\_\_\_ is the distance from one crest to the next or from one trough to the next. |  |
| 89). The most energetic electromagnetic waves are \_\_\_\_\_\_\_\_\_\_\_\_ |  |