

Chapter 29 Test Reflection and Refraction

True or False Questions

Circle the correct answer.

- T** **F** 1. Diffuse reflection occurs when light is reflected in many directions from a rough surface.
- T** **F** 2. Reflection occurs when one part of a wave travels more slowly than another part.
- T** **F** 3. Mirages occur because of the reflection of light on a hot day.
- T** **F** 4. The separation of light into colors arranged according to their frequency is called dispersion.
- T** **F** 5. Sometimes a dry hot road will appear to be wet because of atmospheric refraction.

Multiple Choice Questions

Choose the best answer to each question and write the appropriate letter in the space provided.

- _____ 6. The law of reflection says that
 - a. all waves incident on a mirror are reflected.
 - b. waves incident on a mirror are partially reflected.
 - c. the angle a ray is reflected from a mirror is random.
 - d. the angle of reflection from a mirror equals the angle of incidence.
- _____ 7. When a virtual image is created in a plane mirror
 - a. reflected rays diverge.
 - b. the image is located behind the mirror.
 - c. the image is upright.
 - d. all of the above
- _____ 8. The reason we can read the print on this page from any direction is that
 - a. letters emit black light in all directions.
 - b. letters absorb black light from all directions.
 - c. the white part of a page reflects light in all directions.
 - d. all of the above
- _____ 9. An echo occurs when sound
 - a. is reflected from a distant surface.
 - b. is transmitted through a surface.
 - c. changes speed when it strikes a distant surface.
 - d. all of the above
- _____ 10. Refraction is the result of
 - a. bending.
 - b. more than one reflection.
 - c. displaced images.
 - d. different wave speeds.

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- _____ 11. You can hear noises a long distance away over water at night because
- water conducts sound better at night.
 - sound bounces off water better at night.
 - of refraction of sound in air.
 - of lowered temperature.
- _____ 12. A penny lies in the bottom of a tea cup filled with water. As you look down on the penny, compared to its actual depth, it looks
- further away.
 - closer.
 - at the same depth.
- _____ 13. The spectrum produced by a prism or raindrop is evidence that the average speed of light in a material depends on the light's
- particle nature.
 - wave nature.
 - color.
 - transmission qualities.
- _____ 14. In a double rainbow, the outermost color in the outermost bow is
- red.
 - green.
 - blue.
 - any of these at different times.
- _____ 15. In a curved optical fiber, light
- bends and follows the curve of the fiber.
 - internally reflects in a succession of straight-line paths.
 - scatters in random directions from the fiber's inner surface.
 - gains energy in each internal reflection.

Essay Question

On a separate sheet of paper, answer the following question.

16. What is a mirage and what conditions produce it?