

# Chapters 14-16 Light

PRINT Name \_\_\_\_\_ Period \_\_\_\_\_

1. Discuss the Corpuscular and Wave theories of light. Give evidences.
2. Discuss Maxwell's discovery of the makeup of light.
3. What is the Quantum Theory of Max Planck.
4. What are Eight Sources of Light.
5. What is the Doppler Effect of Light? Give an example.
6. Give an example of a) Rectilinear Propagation, b) Reflection, c) Refraction, d) Luminous, d) Illuminated, e) Opaque, f) Transparent.
7. Using the Equation for Illumination, find the Illumination when the Intensity is 500.00 candelas, and the Distance is 200.00 meters.  
Ans:  $0.125 \text{ lumens/m}^2$ .
8. Diagram and Label a Partial and Total Eclipse of the Sun.
9. Using a **Diagram, Construct** a converging mirror (concave) whose  $cc = 6 \text{ cm}$ ,  $f = 3 \text{ cm}$ , and the object is at  $8 \text{ cm}$ . The size of the object =  $2 \text{ cm}$ . Measure the image distance and the size of the image.
10. a) What is Refraction? b) Write Snell's Law in terms of Speed of Light and Angles of Incidence and Angles of Refraction.
11. Illustrate a) Refraction, b) the Critical Angle c) Total Reflection, and d) show how Fiber Optics works.
12. Show how a Prism separates white light into its colors.
13. Using the Equations for Lens distances and sizes, find the Image and its Size when a  $30\text{cm}$  object is placed  $60\text{cm}$  before a converging lens whose Focal Length is  $20\text{cm}$ . Ans:  $d_o = 30\text{cm}$ ,  $S_o = 15\text{cm}$ .
14. List the Primary Colors of Light and the Primary Colors of Pigment.
15. Illustrate how a Primary and Secondary Rainbow is formed.
16. Show how Blue Sky and Red Sunsets are formed.
17. Show how a Diffraction Grating produces an Interference Pattern.
18. Illustrate how Polarization can cut off light.