

Name: Form:
Teacher:

The St. Michael School
Science Department

Light Review Assignment

- 1 State the two theories of light. [2]
- 2 A plane mirror reflects an object "**O**" to form an image "**I**".
 - a. Draw and label a diagram to show the following: incident ray, reflected ray, incident angle, reflected angle, normal [3]
 - b. State the laws of reflection for plane mirrors. [2]
- 3 A person stands **0.6m** directly in front of a plane mirror and observes their own image.
 - a. How far away is this image from the person? [1]
 - b. State if the image is:
 - i. Real or virtual [1]
 - ii. Upright or inverted [1]
- 4 Using a labelled diagram, explain the principle of operation of a periscope using plane mirrors. [4]
- 5 The following are based on refraction of light.
 - a. When a light ray passes from air into glass at an angle greater than 0° but less than 90° , does it bend towards or away from the normal? [1]
 - b. A light ray passes from a pool of water into air, emerging at an angle of 30° away from the normal. Is the angle between the light ray in the water and the normal greater than, less than or equal to 30° ? [1]
- 6 State Snell's law for refraction. [1]
- 7 Why does a swimming pool appear shallower than it really is? [3]
- 8 Use a diagram to explain what is meant by the following terms when applied to a converging lens:
 - i. Focal Point ii. Focal Length iii. Principal Axis iv. Optical Centre [4]

P.T.O

- 9 A converging lens has a focal length of **8.0cm**. An object of height **4.0cm** is placed **12.0cm** in front of the lens. Using graph paper, determine by scale drawing:
- i. the image distance.
 - ii. the height of the image.
 - iii. the magnification of the lens. [5]
- 10 State one practical application of the converging lens. [1]

Total: 30 Marks