

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Light

Q1. What happens when a ray of light falls perpendicularly on the surface of a plane mirror?

Ans. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q2. How many images of the coin will be seen when two plane mirrors are set at right angles to each other and a coin is placed in-between these two plane mirrors?

Ans. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q3. Image formed by a plane mirror is  
(a) virtual, behind the mirror and enlarged  
(b) virtual, behind the mirror and of the same size as the object  
(c) real at the surface of the mirror and enlarged  
(d) real, behind the mirror and of the same size as the object.

Ans. \_\_\_\_\_

Q4. What is the angle of incidence of a ray if the reflected ray is at an angle of  $90^\circ$  to the incident ray?

Ans. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Light

Q1. What happens when a ray of light falls perpendicularly on the surface of a plane mirror?

Ans. The angle of incidence for such a ray of light is zero. Since the angle of incidence is zero, so according to the law of reflection, the angle of reflection should also be zero. This means that the reflected ray will also travel back from the mirror along the normal.

Q2. How many images of the coin will be seen when two plane mirrors are set at right angles to each other and a coin is placed in-between these two plane mirrors?

Ans. The formula to calculate the no. of images of an object placed between 2 plane mirrors is  $(360^\circ/x^\circ)-1$ ; where 'x' is the angle of inclination.

$$90^\circ - \text{No. of images formed} = (360^\circ/90^\circ)-1 = 4-1 = 3$$

Q3. Image formed by a plane mirror is  
(a) virtual, behind the mirror and enlarged  
(b) virtual, behind the mirror and of the same size as the object  
(c) real at the surface of the mirror and enlarged  
(d) real, behind the mirror and of the same size as the object.

Ans. (b) virtual, behind the mirror and of the same size as the object

Q4. What is the angle of incidence of a ray if the reflected ray is at an angle of  $90^\circ$  to the incident ray?

Ans. We know that the angle of incidence is equal to the angle of reflection.

According to the given condition

$$\begin{aligned}\angle i + \angle r &= 90^\circ \\ \Rightarrow \angle i + \angle i &= 90^\circ \\ \Rightarrow 2\angle i &= 90^\circ \\ \Rightarrow \angle i &= \frac{90^\circ}{2} = 45^\circ\end{aligned}$$