WORKSHEET 1

CHAPTER 9 – REFLECTION OF LIGHT

A. Tick (✓) the correct option.

1. In the barber's shop, two plane mirrors are placed
   a. perpendicular to each other.
   b. parallel to each other.
   c. at an angle 60 degrees between them.
   d. at an angle 45 degrees between them.
2. An example of non-luminous object is
   a. a candle.
   b. the sun.
   c. a bulb.
   d. the moon.
3. When light is incident on a polished surface that will be a
   a. regular reflection.
   b. irregular reflection.
   c. diffused reflection.
   d. normal reflection.
4. According to the laws of reflection
   a. $\angle i = \angle r$.
   b. $\angle i > \angle r$.
   c. $\angle i < \angle r$.
   d. $\angle i \neq \angle r$.
5. The image formed by a plane mirror is always
   a. real and erect.
   b. virtual and erect.
   c. real and inverted.
   d. virtual and inverted.

B. Fill in the blanks.

1. A _____ mirror does not reflect 100 per cent light falling on it.
2. The light ray striking a reflecting surface is called _____
3. _____ image can be obtained on a screen.
4. If two mirrors are kept _____ to each other, three images are formed for an object kept in between them.
5. The angle which the reflected ray makes with the mirror is called the _____ angle of reflection.

C. State whether the following statements are true or false.

1. The angle which the incident ray makes with the normal at the point of incidence is called the angle of incidence.
2. Speed of light in vacuum is 9×10^8 m/s.
3. The image which can be obtained on a screen is called a virtual image.
4. Plane mirror has a virtual focus.
5. The 'normal' is a line drawn at right angle (perpendicular) to the mirror surface at the point of incidence.

D. Match the following.

1. Periscope	plane mirror
2. Real Image	obtained on screen.
3. Virtual Image	bouncing back of light rays
4. Lateral inversion	multiple reflection
5. Reflection of light	not obtained on screen

Name: ..... Teacher's signature: .....

Class: IX Date: .....

E. Answer the following questions.

Very short answer questions

1. What are laws of reflection?
2. Define angle of incidence.

Short answer questions

1. Why is it difficult to read text on a page that is reflected in a mirror?
2. What is glance angle of incidence?

Long answer questions

1. What do you understand by multiple reflections?
2. What are differences between real image and virtual image?

ANSWERS

WORKSHEET 1

A. Tick (✓) the correct option.

1. b 2. d 3. a 4. a 5. a

B. Fill in the blanks.

1. plane
2. incident ray
3. Real
4. perpendicular
5. glance

C. State whether the following statements are true or false.

1. T 2. F 3. F 4. T 5. T

D. Match the following.

1. Periscope	multiple reflection
2. Real Image	obtained on screen.
3. Virtual Image	not obtained on screen
4. Lateral inversion	plane mirror
5. Reflection of light	bouncing back of light rays

E. Answer the following questions.

Very short answer questions

1. i. When a ray of light falls on a reflecting surface, it is reflected in such a way that the angle of incidence is equal to the angle of reflection.
   ii. The incident ray, the normal and the reflected ray all lie in the same plane.
2. The angle which the incident ray makes with the normal.

Short answer questions

1. It is difficult to read text on a page that is reflected in a mirror because a laterally inverted image of the text is formed in the mirror.
2. The angle which the incident ray makes with the mirror is called the glance angle of incidence.

Long answer questions

1. If an object is placed between the two mirrors, we get many images of the object. This is because the image formed by one mirror acts as an object for the second mirror. Further, image of images are also formed. This continues till no more reflection by any mirror is possible. This phenomenon is referred to as multiple reflections.

2. Differences between real image and virtual image

Parameter	Real Image	Virtual Image
Formation	A real image is formed when two or more reflected rays actually intersect each other at a point in front of a mirror.	A virtual image is formed when two or more reflected rays appear to meet at a point behind a mirror.
Screen	A real image can be taken on a screen.	A virtual image cannot be taken on a screen.
Nature	A real image is always inverted (upside down) with respect to the object.	A virtual image is always erect with respect to the object.
Example	Images formed on a cinema screen.	Image of our face in a plane mirror.
Diagram