

WORKSHEET 2

CHAPTER 9 – REFLECTION OF LIGHT

A. Tick (✓) the correct option.

- The image formed by plane mirror is
 - real.
 - virtual.
 - virtual with lateral inversion.
 - real with lateral inversion.
- The image formed by a plane mirror is
 - erect and diminished.
 - erect and enlarged.
 - inverted and of the same size.
 - erect and of the same size.
- According to the law of reflection
 - $\frac{i}{r} = \text{constant}$
 - $\frac{\sin i}{\sin r} = \text{constant}$
 - $i + r = \text{constant}$
 - $i = r$
- The looking glass is a
 - convex mirror.
 - plane mirror.
 - concave mirror.
 - glass plate.
- Which type of image can be obtained on a screen?
 - Virtual
 - Real
 - Diverging
 - Converging

B. Fill in the blanks.

- A mirror _____ most of light incident on it.
- _____ is used to make periscope.
- A plane mirror forms a virtual and upright image which is _____
- If two mirrors are kept perpendicular and an object is placed in between them, then _____ images will be formed.
- If two mirrors are kept parallel and an object is placed in between them, then _____ images are formed.

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

- The incident ray, reflected ray and the normal at the point of incidence, all lie in the same plane.
- The image which cannot be formed on a screen is called virtual image.
- Plane mirrors are used as rear-view mirrors.
- A plane mirror can form real image of a real object.
- A real image can be photographed.

Name:

Teacher's signature:

Class: IX

Date:

D. Match the following.

- | | |
|--|-------------------------------|
| 1. n denotes | plane mirror |
| 2. Diffused reflection | causes the sensation of sight |
| 3. Speed of light | number of images |
| 4. Light | on the rough surface |
| 5. Image of the same size as object always | 3×10^8 m/s in air |

E. Answer the following questions.

Very short answer questions

1. Define regular reflection of light.
2. State the first law of reflection.

Short answer questions

1. Define lateral inversion.
2. What are the characteristics of image formed by a plane mirror?

Long answer questions

1. Write any five uses of plane mirror.
2. The letters on the front of an ambulance are written laterally inverted like **ƎMƎAꞤꞤꞤA**. Give reason.

ANSWERS

WORKSHEET 2

A. Tick (✓) the correct option.

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

B. Fill in the blanks.

1. reflects
2. Plane mirror
3. laterally inverted
4. three
5. infinite

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

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

D. Match the following.

- | | |
|--|--------------------------------|
| 1. n denotes | number of images |
| 2. Diffused reflection | on the rough surface |
| 3. Speed of light | 3×10^8 m/s in air |
| 4. Light | causes the sensation of sight. |
| 5. Image of the same size as object always | plane mirror |

E. Answer the following questions.

Very short answer questions

1. The phenomenon due to which a parallel beam of light on striking a smooth, highly polished surface, bounces back from it as parallel beam of light in some other direction.
2. The angle of incidence ($\angle i$) is equal to angle of reflection ($\angle r$).

Short answer questions

1. The phenomenon due to which the left of object becomes right of image and vice versa, is called lateral inversion.
2. Characteristics of image formed by a plane mirror are:
 - virtual and erect
 - same size as the object
 - laterally inverted
 - The image is as far behind the mirror as the object is in front of it.

Long answer questions

1. Uses of plane mirrors:

Plane mirrors are often used

- i. as looking glasses.
 - ii. in providing false dimensions in showrooms. The effective length of the room appears to be increased by keeping the two mirrors facing each other when fixed on the opposite walls of the room. It is used by opticians, in jewellery shops, etc.
 - iii. in the barber's shop to show the customer the back of his head (for seeing his hair).
 - iv. for the construction of periscopes, kaleidoscopes, solar cookers, etc.
 - v. for signalling purposes in airports, etc.
2. The letters on the front of an ambulance are written laterally inverted because when the letters are focused on the rear-view mirror of the front vehicle, the driver sees the text as AMBULANCE and leaves the path for it to overtake.