

## Reflection of light – Exercise

1. What do you mean by reflection of light?
2. State which surface of a plane mirror- the front smooth surface or the black silvered surface reflects most of the light incident on it.
3. Explain the following terms:
  - (a) a plane surface
  - (b) incident ray
  - (c) reflected ray
  - (d) angle of incidence
  - (e) angle of reflection

Draw a diagram to show them.

4. With the help of ray diagrams, explain the difference between regular and irregular reflection.
5. Differentiate between the reflection of light from a plane mirror and that from a plane sheet of paper.
6. State the two laws of reflection of light.
7. A light ray is incident normally on a plane mirror. What is its angle of incidence? What is the direction of the reflected ray? Show it on a diagram.
8. What are the characteristics of the image formed by a plane mirror? How is the position of image related to the position of object?
9. Differentiate between a real and a virtual image.
10. What is meant by lateral inversion of an image in a plane mirror? Explain it with the help of a ray diagram.
11. Write down the letters of the word POLEX as seen in a plane mirror held perpendicular to the plane of the paper.
12. Why is it difficult to read the image of the text of a page that is reflected in a plane mirror?
13. How many images are formed for a point source kept in between the two plane mirrors  $M_1$  and  $M_2$  at right angles to each other? Show them by drawing a ray diagram.

14. State two uses of a plane mirror.
15. State one use of periscope.
16. Draw a neat labelled diagram to show how a periscope is used to see an object over obstacles.
17. How many plane mirrors are used in a periscope? How are they arranged relative to each other?
18. Is the image seen by a periscope laterally inverted? Give reason for your answer.
19. Is the final image formed in a periscope real?
20. State the mirror formula for formation of total number of images formed in two mirrors, held at an angle.
21. Draw a neat two ray diagram for the formation of images in two plane mirrors, when mirrors are (i) at right angles to each other (ii) when mirrors are facing each other.
22. State three ways in which the image formed in a plane mirror differs from the image formed in a pinhole camera.
23. In a dark room, a parallel beam of light falls on a plane mirror and another parallel beam of light falls on a white wall. Explain why the light reflected by the mirror can be seen only in a certain direction, but the reflected light from the wall can be seen from anywhere.
24. Can you use ray diagram to locate the image formed by plane mirror in the following diagram?

