# Brain International School

Vikas Puri, New Delhi

## ASSIGNMENT NO. 1

**SUBJECT: PHYSICS CLASS-X APRIL,2025**

## Chapter: Light- Reflection and Refraction

1. An optical device forms an erect image of an object placed in front of it. If the size of the image is one half that of the object, the optical device is a

   (a) concave mirror

   (b) convex mirror

   (c) plane mirror

   (d) convex lens.

2. When an object is kept within the focus of a concave mirror, an enlarged image is formed behind the mirror. This image is

   (a) real

   (b) virtual and inverted

   (c) inverted

   (d) virtual and erect

3. The magnification produced when an object is placed at a distance of 20 cm from a spherical mirror is +1/2. Where should the object be placed to reduce the magnification to +1/3?
4. A student has focused the image of an object of height 3 cm on a white screen using a concave mirror of focal length 12 cm. If the distance of the object from the mirror is 18 cm, find the values of the following:
   (i) distance of the image from the mirror.
   (ii) height of the image.
5. A concave mirror has a focal length of 20 cm. At what distance from the mirror should a 4 cm tall object be placed so that it forms an image at a distance of 30 cm from the mirror? Also calculate the size of the image formed.

**For question numbers 6 and 7, two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:**

**a) Both A and R are true, and R is correct explanation of the assertion.**

**b) Both A and R are true, but R is not the correct explanation of the assertion.**

**c) A is true, but R is false.**

**d) A is false but R is true.**

8. **Assertion**: Convex mirrors can produce both real and virtual images.
   **Reason:** Plane mirror always forms virtual image.
9. **Assertion:** The SI unit of power of lens is ‘dioptre’.
   **Reason:** The power of a concave lens is positive and that of a convex lens is negative.