



ASSIGNMENT NO. 2

SUBJECT: PHYSICS

CLASS-X

MAY, 2025

CH:9 LIGHT: REFLECTION AND REFRACTION

1. Rays from Sun converge at a point 15 cm in front of a concave mirror. Where an object should be placed so that size of its image is equal to the size of the object?
(a) 15 cm in front of the mirror
(b) 30 cm in front of the mirror
(c) between 15 cm and 30 cm in front of the mirror
(d) more than 30 cm in front of the mirror
2. A 10 mm long awl pin is placed vertically in front of a concave mirror. A 5 mm long image of the awl pin is formed at 30 cm in front of the mirror. The focal length of this mirror is
(a) – 30 cm (b) – 20 cm (c) – 40 cm (d) – 60 cm
3. An object is placed at a distance of 30 cm in front of a convex mirror of focal length 15 cm. Write four characteristics of the image formed by the mirror.
4. Name the type of mirrors used in the design of solar furnaces. Explain how high temperature is achieved by this device.
5. The magnification produced by a spherical mirror is -3 . List four information you obtain from this statement about the mirror/ image.
6. The linear magnification produced by a spherical mirror is $+3$. Analyse this value and state the (i) type of mirror and (ii) position of the object with respect to the pole of the mirror. Draw a ray diagram to show the formation of image in this case.
7. The linear magnification produced by a spherical mirror is $+1/3$. Analyzing this value state the (i) type of mirror and (ii) position of the object with respect to the pole of the mirror. Draw any diagram to justify your answer.
8. Assertion (A): The centre of curvature is not a part of the mirror. It lies outside its reflecting surface.
Reason (R): The reflecting surface of a spherical mirror forms a part of a sphere. This sphere has a centre.
9. Assertion (A): A ray passing through the centre of curvature of a concave mirror after reflection is reflected back along the same path.
Reason (R): The incident rays fall on the mirror along the normal to the reflecting surface.
10. Assertion(A): When the object moves with a velocity 2 m/s, its image in the plane mirror moves with a velocity of 4 m/s.
Reason (R): The image formed by a plane mirror is as far behind the mirror as the object is in front of it.