

Science

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(Chapter – 10) (Light – Reflection and Refraction)

(Class – X)

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Question 1:

Define the principal focus of a concave mirror.

Answer 1:

Light rays that are parallel to the principal axis of a concave mirror converge at a specific point on its principal axis after reflecting from the mirror. This point is known as the principal focus of the concave mirror.

Question 2:

The radius of curvature of a spherical mirror is 20 cm. What is its focal length?

Answer 2:

Radius of curvature, $R = 20$ cm

Radius of curvature of a spherical mirror = $2 \times$ Focal length (f)

$$R = 2f$$

$$f = \frac{R}{2} = \frac{20}{2} = 10 \text{ cm}$$

Hence, the focal length of the given spherical mirror is 10 cm.

Question 3:

Name the mirror that can give an erect and enlarged image of an object.

Answer 3:

When an object is placed between the pole and the principal focus of a **concave mirror**, the image formed is virtual, erect, and enlarged.

Question 4:

Why do we prefer a convex mirror as a rear-view mirror in vehicles?

Answer 4:

Convex mirrors give a virtual, erect, and diminished image of the objects placed in front of them. They are preferred as a rear-view mirror in vehicles because they give a wider field of view, which allows the driver to see most of the traffic behind him.

