

Chapter -1 Light – Reflection and Refraction

1 – Mark Questions

1. Why do we prefer convex mirror as a rear-view in vehicles?
2. Where is the image formed in a concave mirror, when the object is between infinity and centre of curvature?
3. What kind of mirror is used as reflector of street light lamps?
4. Define refractive index
5. A small object is placed in front of convex lens, when a real, inverted and enlarged image is formed on the other side of the lens. Where is the object placed?

2 – Mark Questions

1. State two uses of convex mirror.
2. State four characteristics of image formed by plane mirror.
3. What are the two characteristics of virtual image?
4. Find the focal length of lens of power $-2.0D$. What type of lens is this?
5. The image of an object is formed on itself when placed at a distance of 50cm from a concave mirror. What is the focal length of concave mirror?

3 – Mark Questions

1. An object 5.0 cm in length is placed at a distance of 10cm from a convex mirror of radius of curvature 150cm. Find the position, nature and size of the image.
2. Find the position, nature and size of image of an object 4cm high placed at a distance of 10 cm from a concave mirror of focal length 20 cm.
3. State sign conventions in case of concave lens.
4. State three rules for drawing images in convex lens.
5. A concave lens has a focal length of 15cm. At what distance should an object 10 cm long be placed so that it forms an image of 10 cm from the lens? Find the nature and size of the image formed.

5 – Mark Questions

1. A convex mirror used on moving automobile has radius of curvature of 3.0 m. If another truck is following it at a constant distance of 4.5m, find (i) position, (ii) nature and (iii) magnification for the image formed in it. Also draw a neat diagram for the formation of image.
2. What do you understand by the term refraction? State Snell's law of refraction.
A ray of light strikes the surface of water, such that its speed in water is $2.25 \times 10^8 \text{ cms}^{-1}$. If refractive index of water is $4/3$, what is the speed of light in air?