



# PHYSICS

**BOOKS - BETTER CHOICE PUBLICATION**

## REFLECTION OF LIGHT

**Very Short Answer Type Questions 1 Mark**

**1. Define a ray.**



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2. Define a spherical mirror.



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3. Does size of mirror affect the nature of the image?



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4. What is the focal length of a plane mirror?



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## Short Answer Type Questions 2 Marks

1. Does size of mirror affect the nature of the image?



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2. A concave mirror is held inside water. What would be the change in the focal length of the mirror?



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3. A concave mirror of small aperture forms a sharper image. Why?



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4. Which mirror is used as a rear-view mirror in vehicles.



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5. Which mirror is preferred as a driver's mirror and why?



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6. Concave mirror is used as a make up mirror. Explain.



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7. By stating the sign conventions and assumptions used, derive the relation between

distance of object, distance of image and radius of curvature of convex spherical surfaces, when refraction takes from optically rarer to optically denser medium.



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## Short Answer Type Questions 3 Marks

1. When an object is placed beyond centre of curvature of a concave mirror, the image is formed:



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## Long Answer type Questions 5 Marks

1. Derive mirror formula for a convex mirror.



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2. By stating sign conventions and assumptions made, derive mirror formula for a concave mirror.





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3. By stating sign conventions and assumptions made, derive mirror formula for a concave mirror.



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4. The image formed by a concave mirror is



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5. Derive mirror formula for a convex mirror.



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6. Explain the sketches the formation of a real enlarged image for a concave mirror



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7. Derive mirror formula for a convex mirror.



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8. By stating sign conventions and assumptions made, derive mirror formula for a concave mirror.



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9. State the characteristics of image formed by a plane mirror.



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1. What is the minimum size of the plane mirror , in which a man can see his full height?

Explain.



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2. When does a concave mirror form a virtual image?



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3. What is the difference between the virtual image produced by convex mirror and concave mirror.



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## Most Expected Questions 2 Marks

1. Differentiate between a real image and a virtual image.



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**2.** A ray of light falling normal to the mirror returns along the same path. Why?



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**3.** A concave mirror always has a real focus. Explain this with the help of a ray diagram.



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4. Write the uses of  
convex mirror?



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## Numericals Problems

1. A 5 cm long needle lies along the principal axis axis of a concave mirror of focal length 20 cm in such a way that the end closer to the

pole is 40 cm from it. Find the length of the image of the needle formed by the mirror.



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2. A 5 cm long needle lies along the principal axis of a concave mirror of focal length 20 cm in such a way that the end closer to the pole is 40 cm from it. Find the length of the image of the needle formed by the mirror.



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3. A 5 cm long needle lies along the principal axis of a concave mirror of focal length 20 cm in such a way that the end closer to the pole is 40 cm from it. Find the length of the image of the needle formed by the mirror.



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4. When an object is placed at a distance of 60 cm from a convex spherical mirror, the magnification produced is  $\frac{1}{2}$ . Where should



the object be placed to get a magnification of  $1/3$ ?



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5. A ray of light is incident at an angle  $60^\circ$  on a horizontal plane mirror. Through what angle, should the mirror be tilted to make the reflected ray horizontal?



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6. An object is placed in front of a concave mirror of radius of curvature 40 cm at a distance of 10 cm. Find the position and magnification of the image.



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7. An object of height 5 cm is placed 2 m in front of concave mirror of radius of curvature 40 cm. Find the size of the image



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