

LIGHT REFLECTION AND REFRACTION

Reflection-X(Board)

Question 1- Define the following terms relating to a concave mirror and represent with the help of diagram-

- (i) Aperture
- (ii) Radius of curvature
- (iii) Principle focus
- (iv) Center of Curvature

Question 2- A concave mirror produces three times magnified real image of an object placed at 10 cm in front of it. Where is the image located?

Question 3- A convex mirror has focal length of 20 cm. At what distance from the mirror a 5 cm tall object be placed so that it forms an image at 15 cm away from the object? Also draw the ray diagram, calculate the size of the image formed and magnification of the mirror. (4 mark)

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Question 4- When light enters from air to glass, the angles of incidence and refraction in air and glass are 45° and 30° respectively. The refractive index of glass is

(Given that $\sin 45^\circ = 1/\sqrt{2}$, $\sin 30^\circ = 1/2$)

Question 5- The image of the moon is formed by a concave mirror whose radius of curvature is 4.8 m at a time when distance from the moon is 2.4×10^8 m . If the diameter of the image is 2.2 cm, the diameter of the moon is-

Question 6- Using mirror formula, compute the position of the object placed in front of a concave mirror of focal length f so that the image formed is of same size of the object.

Question 7- An object is placed at a distance of 30 cm from a convex mirror, the magnification produced is $1/2$. Where should the object be placed to get the magnification of $1/3$?

Question 8- A concave mirror produces three times magnified (enlarged) real image of an object placed at 10 cm in front of it. Where is the image located?

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Question 9- A convex mirror is used to form the image of an object. Then which of the following statement is wrong -

- (a) The image lies between the pole and the focus
- (b) The image is diminished in size
- (c) The image is erect
- (d) The image is real

Question 10-

a) Draw a ray diagram to show the formation of image of an object placed between infinity and the centre of a curvature of concave mirror .

- (b) A concave mirror of focal length 15 cm forms an image 10 cm from the mirror. Calculate
- (i) the distance of the object from the mirror.
 - (ii) the magnification for the image formed.
 - (iii) the nature of the image formed