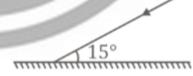# Udaan 2025
Physics
Light - Reflection & Refraction   DHA - 02

Q 1 A dentist uses a small mirror that gives a magnification of 4 when it is held 0.60 cm from a tooth. The radius of curvature of the mirror is

(A) 1.60 cm (convex)

(B) 0.8 cm (concave)

(C) 1.60 cm (concave)

(D) 0.8 cm (convex)

Q 2 A spherical mirror and a thin lens have each a focal length of – 20 cm

(A) both are concave

(B) both are convex

(C) mirror is concave, lens is convex

(D) mirror is convex, lens is concave

Q 3 A convex mirror has a focal length 15 cm. A real object placed at a distance 15 cm in front of it from the pole, produces an image at

(A) 7.5 cm   (B) 30 cm

(C) infinity   (D) 15 cm

Q 4 A virtual, erect and magnified image of an object is to be produced with a concave mirror of focal length 12 cm. Which of the following object distance should be chosen for this purpose?

(A) 10 cm   (B) 14 cm

(C) 18 cm   (D) 24 cm

Q 5 The unit of magnification is

(A) m   (B) m^2

(C) m^{-1} (D) none of these

Q 6 The laws of reflection are true for

(A) the plane mirror only

(B) the concave mirror only

(C) the convex mirror only

(D) all reflecting surfaces

Q 7 A ray of light is incident on a plane mirror at an angle θ. If the angle between the incident and reflected rays is 80°, what is the value if θ?

(A) 40°   (B) 50°

(C) 45°   (D) 55°

Q 8 When a ray of light strikes a plane mirror at an angle of 15° with the mirror, what will be the angle through which the ray gets deviated?

(A) 15°   (B) 30°

(C) 75°   (D) none of these

Answer Key

Q1	C		Q5	D
Q2	A		Q6	D
Q3	A		Q7	B
Q4	A		Q8	B

Hints & Solutions

Q 1 **Text Solution:**

Substitute the given values in the expression for magnification and thus find the image distance. Now recall the mirror formula for spherical mirrors and then substitute accordingly and then find the focal length. Also, we know that the radius of curvature is twice the focal length and hence we get the answer.

Video Solution:

Q 2 **Text Solution:**

By convention, the focal length of a concave mirror and a concave lens are taken as negative.

Video Solution:

Q 3 **Text Solution:**

Use mirror formula with proper sign convention.

Video Solution:

Q 4 **Text Solution:**

If the object is placed between the pole and focus of the concave mirror only then the image formed is virtual, erect and magnified.

Video Solution:

Q 5 **Text Solution:**

The ratio of two same quality is dimensionless.

Video Solution:

Q 6 **Text Solution:**

all reflecting surfaces

Video Solution:

Q 7 **Text Solution:**

Given (Angle of Incidence + Angle of Reflection). By using law of reflection we can find the value of angle of reflection and with the help of that we can find the value of theta.

Video Solution:

Q 8 **Text Solution:**

The deviation of a mirror is equal to twice the angle of incidence with the mirror.

Video Solution: