
📘 Chapter 10 – Light: Reflection and Refraction (30 Important Q&A)

Basic Concepts

Q1. Define reflection of light.
Ans: Bouncing back of light from a surface it cannot pass through.

Q2. Define refraction of light.
Ans: Bending of light when it passes from one medium to another.

Q3. What is the normal?
Ans: Imaginary line perpendicular to the surface at the point of incidence.

Q4. Define angle of incidence (i).
Ans: Angle between the incident ray and the normal.

Q5. Define angle of reflection (r).
Ans: Angle between the reflected ray and the normal.

Laws of Reflection

Q6. First law of reflection:
Ans: The incident ray, reflected ray, and normal lie in the same plane.

Q7. Second law of reflection:
Ans: Angle of incidence is equal to the angle of reflection.

Q8. Examples of reflection:
Ans: Plane mirror, water surface, polished metal.

Q9. Types of reflection:
Ans: Regular reflection (from smooth surface), **diffused reflection** (from rough surface).

Q10. Use of plane mirror:
Ans: Seeing own image, periscopes, rear-view mirrors.

Spherical Mirrors

Q11. Two types of spherical mirrors:
Ans: Concave and convex mirrors.

Q12. Concave mirror converges or diverges light?

Ans: Converges (focuses light).

Q13. Convex mirror converges or diverges light?

Ans: Diverges (spreads light).

Q14. Real image:

Ans: Can be obtained on a screen; formed by actual intersection of rays.

Q15. Virtual image:

Ans: Cannot be obtained on a screen; formed by apparent intersection of rays.

Mirror Formula & Magnification

Q16. Mirror formula:

Ans: $1/f = 1/v + 1/u$ (f = focal length, v = image distance, u = object distance)

Q17. Magnification (m) formula:

Ans: $m = h_i / h_o = -v/u$ (h_i = image height, h_o = object height)

Q18. Concave mirror uses:

Ans: Headlights, shaving mirrors, solar concentrators.

Q19. Convex mirror uses:

Ans: Rear-view mirrors, security mirrors.

Q20. Focal point:

Ans: Point where parallel rays converge (concave) or appear to diverge (convex).

Refraction of Light

Q21. Refractive index:

Ans: Ratio of speed of light in vacuum to speed of light in medium.

Q22. Snell's law:

Ans: $n_1 \sin i = n_2 \sin r$ (n_1, n_2 = refractive indices of media)

Q23. Light bends towards normal when:

Ans: It passes from rarer to denser medium.

Q24. Light bends away from normal when:

Ans: It passes from denser to rarer medium.

Q25. Examples of refraction:

Ans: Spoon in water appears bent, lenses, prism.

Lenses

Q26. Two types of lenses:
Ans: Convex (converging) and concave (diverging) lenses.

Q27. Convex lens forms:
Ans: Real or virtual image depending on object distance.

Q28. Concave lens forms:
Ans: Always virtual, erect, and diminished image.

Q29. Lens formula:
Ans: $1/f = 1/v - 1/u$

Q30. Uses of lenses:
Ans: Spectacles, magnifying glass, camera, microscope, telescope.