Ray optics

1. **Ray Optics** – The branch of optics that describes light propagation in terms of rays.
2. **Reflection** – The bouncing back of light when it strikes a smooth surface.
3. **Angle of Incidence (i)** – The angle between the incident ray and the normal to the surface at the point of incidence.
4. **Angle of Reflection (r)** – The angle between the reflected ray and the normal.
5. **Plane Mirror** – A flat mirror that forms virtual, erect, and laterally inverted images.
6. **Spherical Mirror** – A mirror that has the shape of a portion of a sphere, can be concave or convex.
7. **Paraxial Ray** – A ray close to the principal axis and nearly parallel to it.
8. **Marginal Ray** – A ray far from the principal axis.
9. **Focal Length (f)** – The distance from the pole to the focus of a mirror or lens.
10. **Radius of Curvature (R)** – The radius of the sphere of which the mirror is a part.
11. **Mirror Equation** – $\frac{1}{f} = \frac{1}{v} + \frac{1}{u}$
12. **Lateral Magnification (m)** – The ratio of the height of the image to the height of the object.
13. **Refractive Index (n)** – Ratio of speed of light in vacuum to that in the medium: $n = \frac{c}{v}$
14. **Optical Path Length** – The product of refractive index and the geometric length of the path.
15. **Angle of Refraction (r)** – The angle between the refracted ray and the normal.
16. **Snell's Law** – $n_1 \sin i = n_2 \sin r$
17. **Critical Angle** – The angle of incidence in the denser medium for which the angle of refraction is 90°.
18. **Total Internal Reflection** – The phenomenon when light is completely reflected at the boundary of a denser medium.
19. **Apparent Depth** – The perceived depth of an object submerged in a transparent medium.
20. **Lens** – A transparent refracting medium bounded by two surfaces.
21. **Thin Lens** – A lens with thickness small compared to its focal length.
22. **Lens Maker's Formula** – $\frac{1}{f} = (n-1)\left(\frac{1}{R_1} - \frac{1}{R_2}\right)$
23. **Power of a Lens (P)** – The reciprocal of focal length in meters: $P = \frac{100}{f(\text{cm})}$
24. **Silvered Lens** – A lens with one side silvered to act as a mirror-lens combination.
25. **Prism** – A transparent optical element with flat, polished surfaces that refract light.
26. **Angle of Deviation (δ)** – The angle between the incident ray and the emergent ray.
27. **Minimum Deviation** – The least value of the angle of deviation for a given prism.

28. **Dispersion** – The separation of white light into its constituent colors.
29. **Dispersive Power** – A measure of the ability of a material to separate different wavelengths.
30. **Scattering of Light** – The redirection of light due to particles or irregularities in the medium.