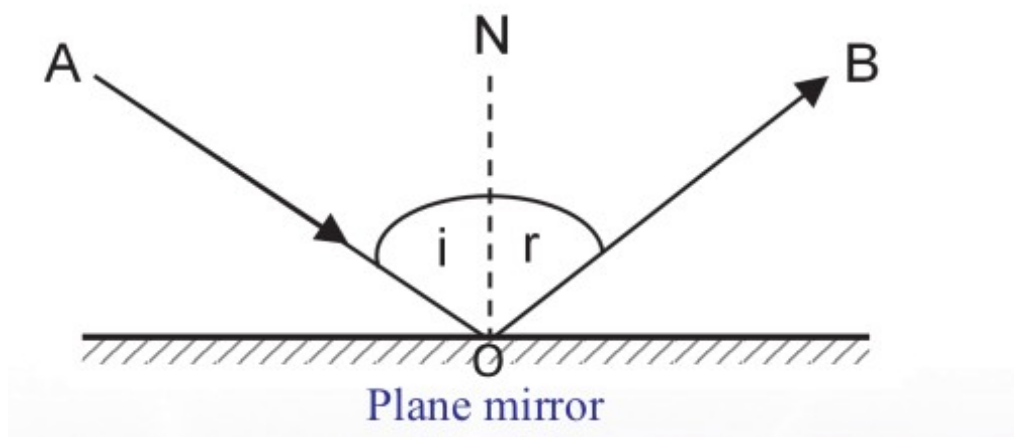# Physics Class Notes

Unit 4 – Reflection of Light

Click here to watch the video

Light

Light is a form of energy essentially required to see objects. Reflection is the phenomenon helpful for this.

Reflection of light

Light falling on the surface of an object comes back to the same medium. This is reflection of light.
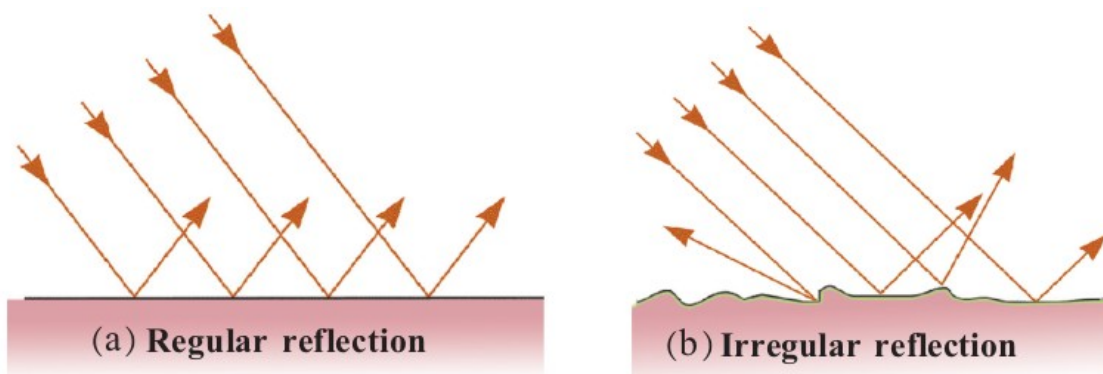

Plane mirror

Here   AO – incident ray

OB- reflected ray

ON- normal to the surface

i - angle of incidence (angle between incident ray and normal)

r - angle of reflection (angle between normal and reflected ray)

Laws of Reflection

- **When light is reflected from a smooth surface, the angle of incidence and angle of reflection are equal.**
- **The incident ray, reflected ray and normal to surface are in the same plane.**

Regular and Irregular reflection

(a) **Regular reflection**   (b) **Irregular reflection**

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When light reflected back from smooth surface, the reflected rays are parallel to each other. This type of reflection is called regular reflection.
Eg: In plane mirrors and spherical mirrors light undergoes regular reflection.

When light falls on rough surface, the reflected rays are not parallel. This type of reflection is called irregular reflection or scattered reflection. Image will not be formed by scattered reflection.
Eg: Reflection of light due to dust particles in the atmosphere.

Image Formation by a Plane Mirror
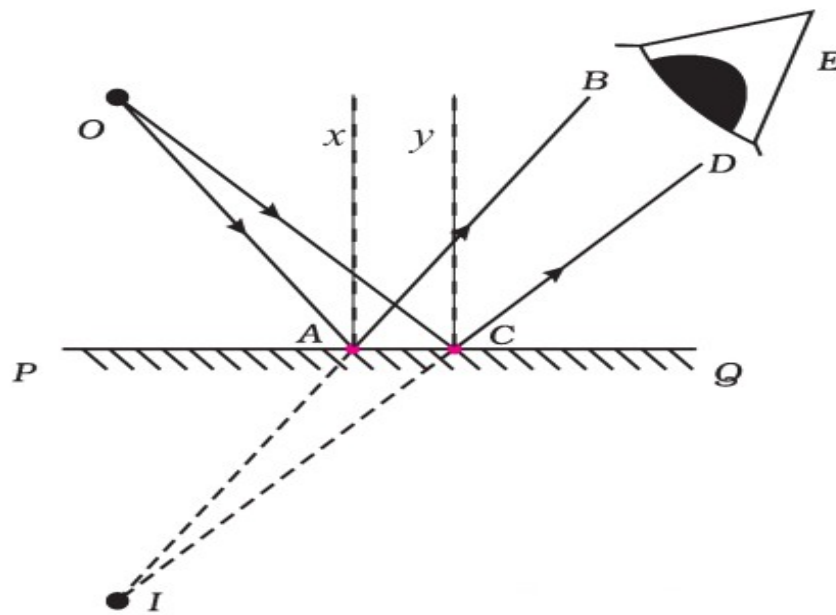
The incident rays OA and OC from the point O are reflected as AB and CD. These rays are appeared to meet at a point I inside the mirror. The image of the object O is formed at I.
Features of the image
  • **The distance from the mirror to the object and the image from the mirror is equal.**
  • **Same size as that of the object.**
  • **Virtual.**

Multiple Reflection and Image Formation
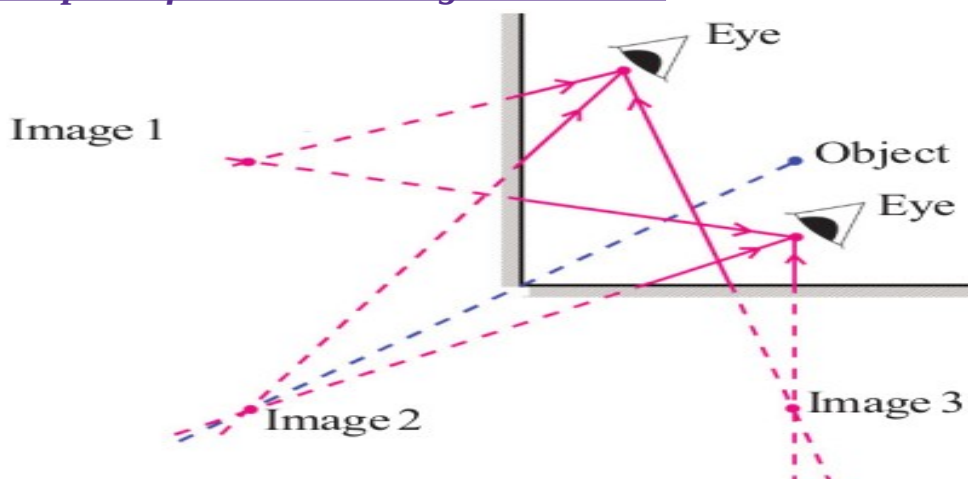
Arranging two plane mirrors in such a way that their one pair of edges are in contact, multiple images can be formed.

If the angle between the mirrors is θ, then the number of images, n = (360/θ)- 1

For Example if the angle between the mirrors is 60^0, the number of images, n = (360/60)-1

$= 6-1=5.$

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