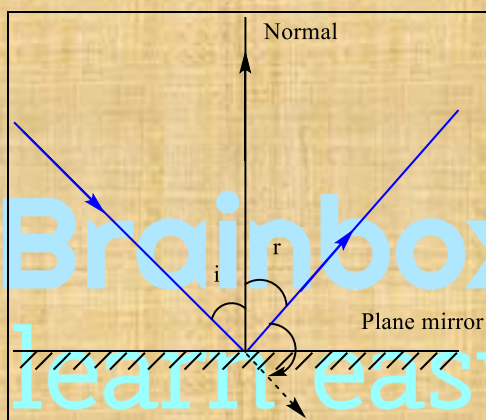


Chapter 10

REFLECTION AND REFRACTION

REFLECTION AT PLANE SURFACES:

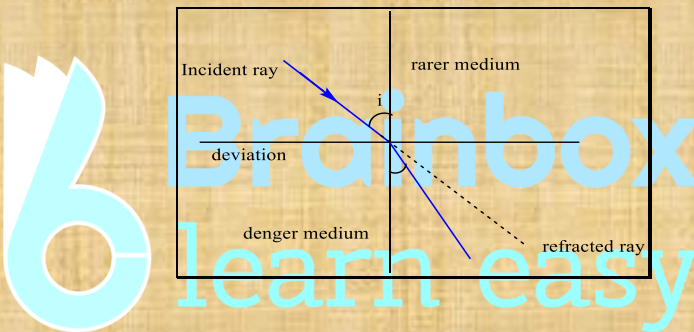
- 1) Incident ray, reflected ray and normal drawn to the surface lie in the same plane.
- 2) Angle of incidence (i) = Angle of reflection (r).
- 3) Angle of deviation (d) = $180 - 2i$.
- 4) For normal incidence deviation is 180° .



- 5) The image formed by a plane mirror is unmagnified field, virtual and erect (upright)
- 6) The image is laterally inverted i.e.,. The left side of the image appears to be the right side and right side as left side.
- 7) The minimum height of the plane mirror to observe full height of a person is half the height of that person.
- 8) The minimum height of the plane mirror hung on a wall of a room to observe the full height of the opposite wall by a person standing at the centre of a room is one third of the height of the rear wall.
- 9) When a plane mirror is rotated through an angle θ the reflected ray rotates through an angle 2θ .

REFRACTION OF LIGHT:

- I. When a ray of light travels one medium into another medium, it bends from its original path at the plane of separation of the two media due to change in speed of light. This is called refraction of light.
- II. The angles made by the incident and refracted rays with normal are called angle of incidence (i) and angle of refraction (r).
- III. (a) When a ray of light goes from a rarer medium to a denser medium. It bends towards the normal and $r < i$.



- (b) When a ray of light goes from a denser medium to a rarer medium, it bends away from the normal and $r > i$.

