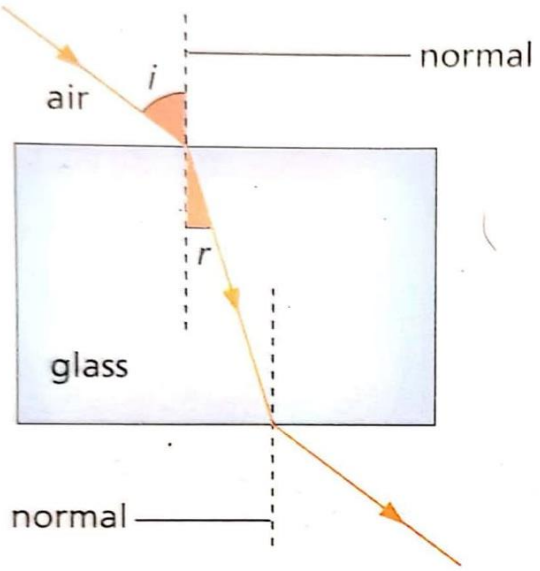
PHYSICS (GRADE-7)
LIGHT
Lesson 29: Refraction of light

Mrs. Ruksana and Mrs. Farhana

1. State what the term refraction means.

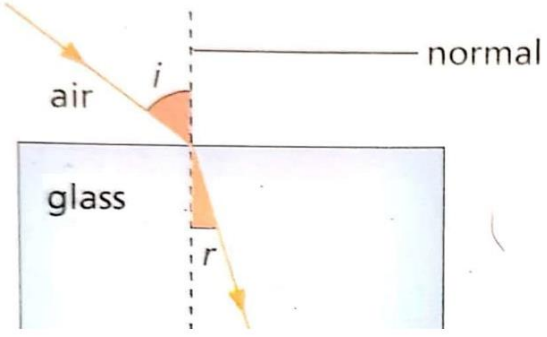
Ans.
The bending of light when it passes from one material (called medium) to another is called refraction.



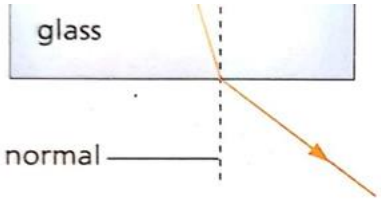
2. Write some facts about refraction.

Ans.

i) A ray of light is bent towards the normal when it enters an optically denser medium at an angle. For example, from air to glass. Here, the angle of refraction *r* is less than the angle of incidence *i*.

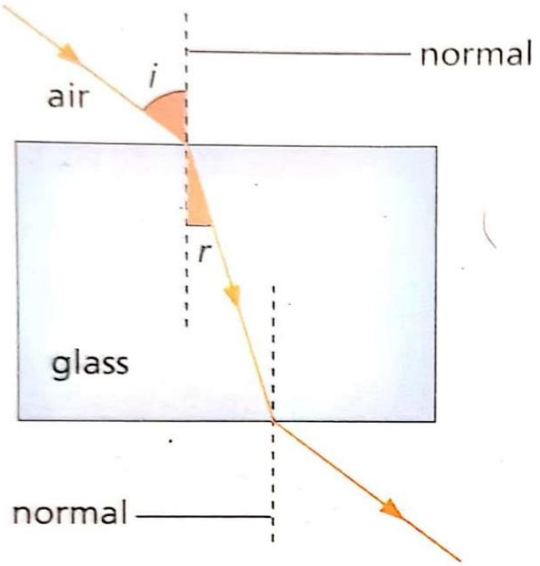


ii) A ray of light is bent away from normal when it enters an optically less dense medium. For example, from glass to air. Here, the angle of refraction *r* is more than the angle of incidence *i*.

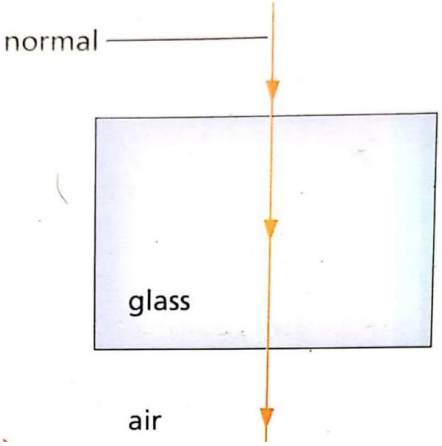


Air

iii) A ray emerging from a parallel-sided block is parallel to the ray entering, but is displaced sideways.



iv) A ray travelling along the normal direction at a boundary is not refracted.

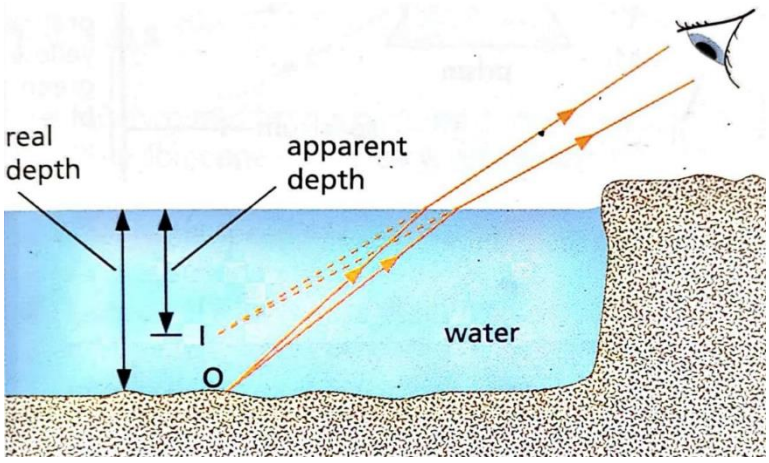


Note: “optically denser” means having a greater refraction effect, the actual density may or may not be greater.

3. Explain real and apparent depth.

Ans.

When an object placed in a denser medium is viewed from less dense medium, it appears to be at a depth less than its original depth. This is because of the refraction of light from denser to less dense medium. To the observer, the rays seem to come from a higher position.



4. What is dispersion?

Ans.

Dispersion of light is the splitting up of white light into seven colors on passing through a transparent medium like a glass prism. When a white light beam is pass through a prism, a band of seven colors is formed, which is known as spectrum of white light. The seven colors in the spectrum are red, orange, yellow, green, blue, indigo and violet.