

# REFRACTION OF LIGHT THROUGH A PRISM

**AIM:** To trace the path of rays of light after refraction through glass prism.

**MATERIALS REQUIRED:** A drawing board, a glass prism, few sharp pointed objects, three sheets of white paper, a measuring scale, pencil, protractor.

## THEORY

Let ABC be the principle section of a glass prism of refractive index ' $n$ '. The angle ' $A$ ' is the refracting angle of the prism.

When a ray of light PQ from rarer medium (such as air) is incident on a refracting surface AB, it gets refracted and bends towards the normal to plane of face AB. Here, ray of light is entering from air to glass and refracted along QR.

At the second surface AC, the refracted ray QR has entered from glass to air, i.e., denser to rarer medium and emerges out, along RS as it has bent away from the normal, i.e., bends towards the base of the prism shown in the adjacent figure.

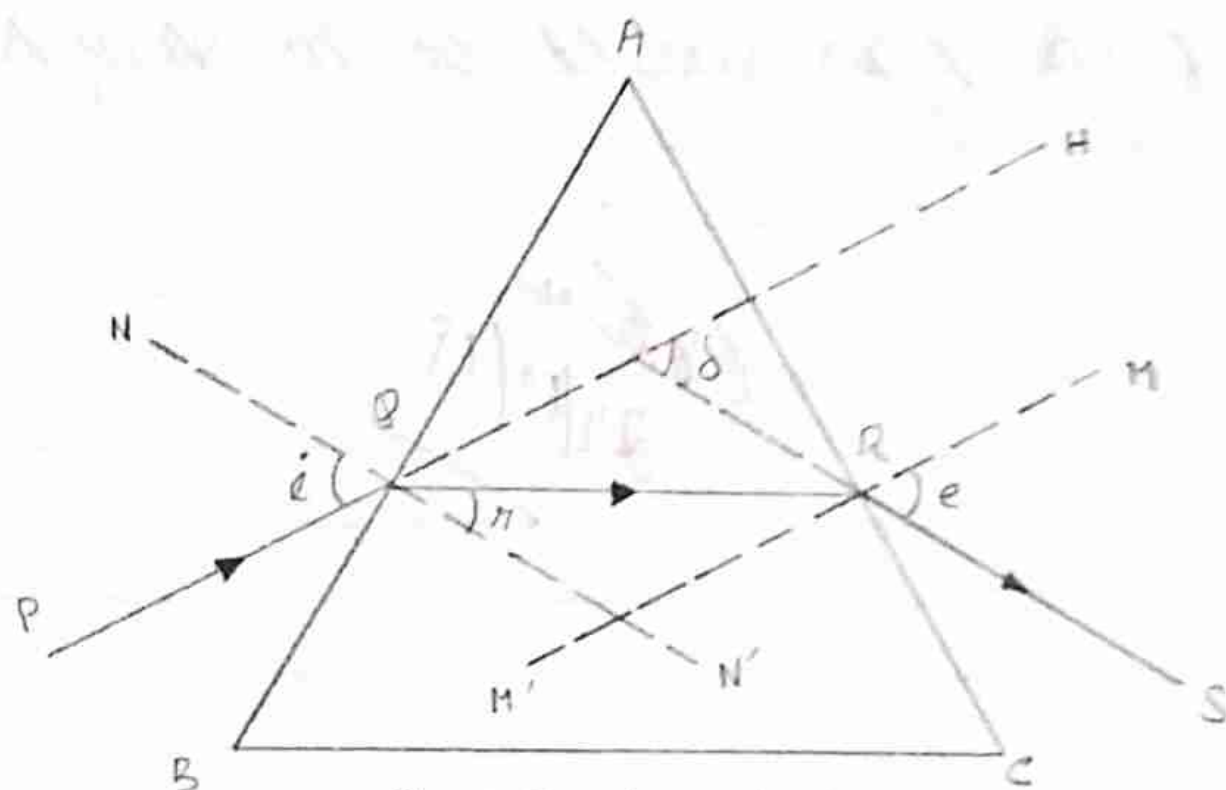
Thus, the incident ray suffers two refractions through the prism.

## OBSERVATION

The ray of light entering from air to glass at the first refracting surface, bends toward the normal after refraction. At the second refracting surface, the ray of light entering from glass to air bends away from the normal.

Thus ray of light suffers two refractions on passing through a prism and hence deviates through a certain angle from its original path.





Deviation by a prism

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|-----------------------------|--------------------------------------|
| PQ → Incident ray           | $\angle i$ → angle of incidence      |
| QR → Refracted ray          | $\angle r$ → angle of refraction     |
| RS → Emergent ray           | $\angle e$ → angle of emergence      |
| $\angle A$ → Angle of prism | $\angle \delta$ → angle of deviation |