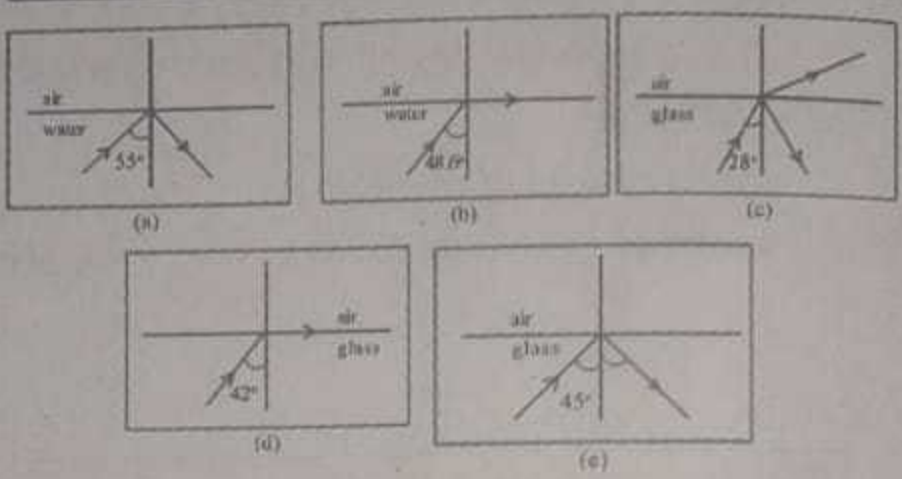
- Feeling of mirage

Total Internal Refraction

When a ray of light passes from a medium of greater optical density to that of lower optical density, the angle of incidence at which the angle of refraction becomes 90° is the critical angle. The critical angle in water is 48.6°.

When a ray of light passes from a medium of higher optical density to a medium of lower optical density at an angle of incidence greater than the critical angle, the ray is reflected back to the same medium without undergoing refraction. This phenomenon is known as total internal reflection.



Qn. 21

Which are the figures that show total internal reflection?

Ans a, e

Qn. 22

What is the critical angle of glass?

Ans 42^0

Qn. 23

Will total internal reflection take place when light passing through water is incident on the surface of separation with air at an angle of incidence of 45^0? Why?

Ans No, 45^0 is less than the critical angle of water.

Qn. 24

Find out the practical applications of total internal reflection in our day to day life

Ans

- It is utilised in automotive rail sensors and in touch screens related to camera.
- Medical field - Endoscope
- In the field of telecommunications - optical fibre cables.