Qn. 14

Are the angle of incidence, angle of refraction and the normal at the point of incidence on the same plane?

Ans Yes

While entering from air to glass (from a medium of lower optical density to that of a greater one) the refracted ray deviates towards the normal.

While entering from glass to air (from a medium of greater optical density to that of a lower one) the refracted ray deviates away from the normal.

The angle of incidence, angle of refraction and the normal at the point of incidence are in the same plane.

Qn. 15

Does refraction take place for a ray while entering a glass slab normal to it?

Ans No

Examine using a ray of light from a laser torch.

Ray diagrams of a light ray passing through different media are depicted. Find out the appropriate figures by observing these figures and also based on the concepts you have developed.

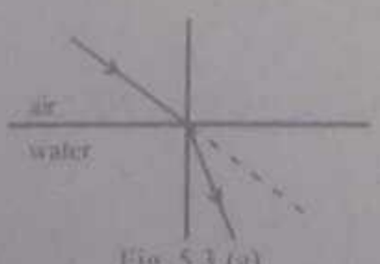


Fig. 5.3 (a)

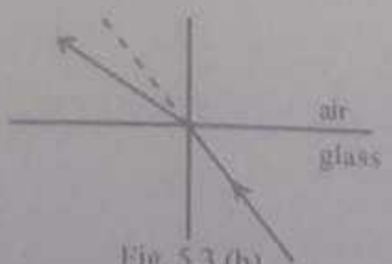


Fig. 5.3 (b)

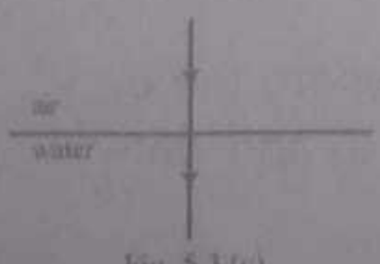


Fig. 5.3 (c)

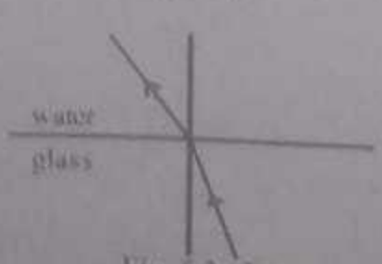
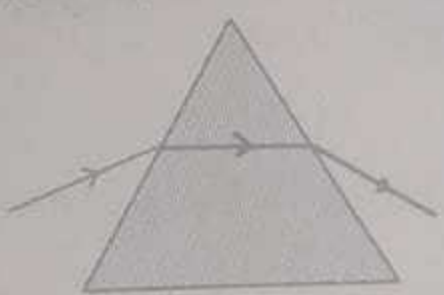


Fig. 5.3 (d)

Fig. 5.3 (e)

• No deviation takes place in the case of a light ray falling normally on a medium	5.3(c), 5.3(e)
• When light passes obliquely from a medium of higher optical density to a medium of lower optical density, the refracted ray deviates away from the normal.	5.3(b) 5.3(d)
• When light is incident obliquely, from a medium of lower optical density to a medium of greater optical density, the refracted ray deviates towards the normal.	5.3(a)

Its an experiment, can you find out the path of light through a triangular prism using a laser torch? Record it in the science diary.



From air to Glass

Sl. No.	Angle of incidence (i)	Angle of refraction (r)	sin i	sin r	sin i/sin r
1	20°	13°	0.34	0.22	1.5
2	30°	19.45°	0.5	0.33	1.5
3	45°	28°	0.7	0.47	1.5
4	60°	35°	0.86	0.57	1.5

Light from glass to Air

Sl. No.	Angle of incidence (i)	Angle of refraction (r)	sin i	sin r	sin i/sin r
1	10°	15°	0.17	0.26	0.7
2	14°	23°	0.26	0.39	0.7
3	20°	39°	0.34	0.51	0.7
4	30°	49°	0.50	0.75	0.7