

27/11/21
9W

HOME ASSIGNMENT

(11) A ray of light travels from a denser medium to a rarer medium. How will it bend?

Ans When the ray of light travels from a denser medium to a rarer medium the light ray will bend away from the normal.

(12) The diagram given below in Fig. 5.38 shows a ray of light AO falling on a surface separating two media. Draw the refracted ray in each case.

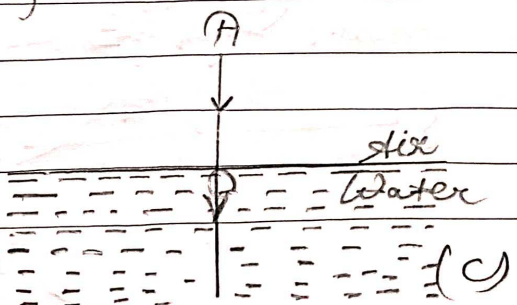
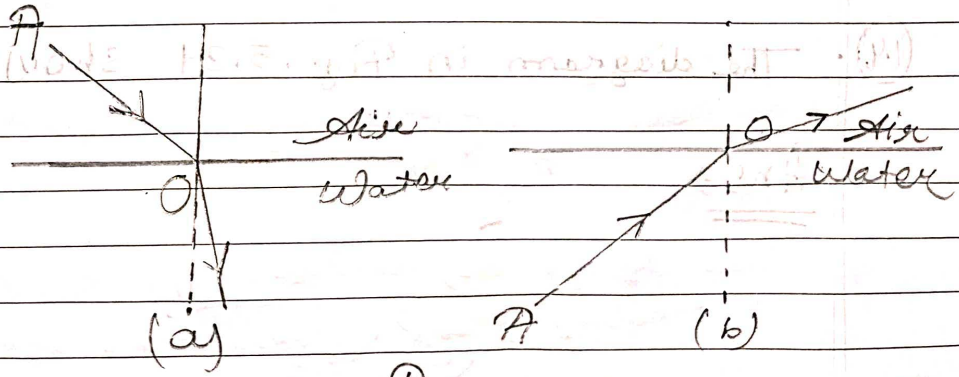
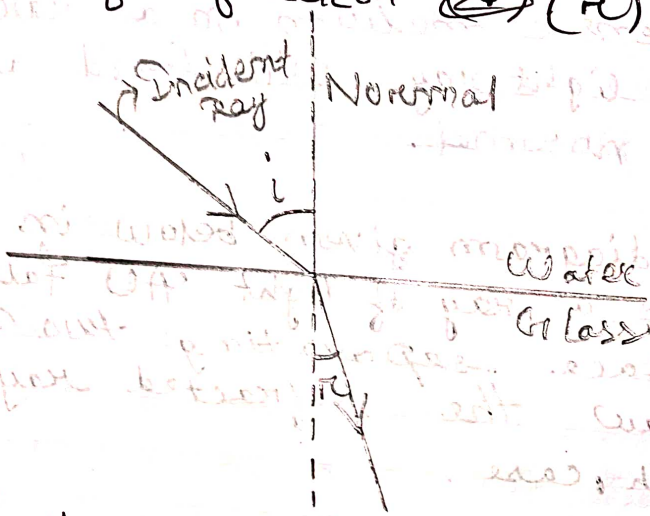


Fig. 5.38

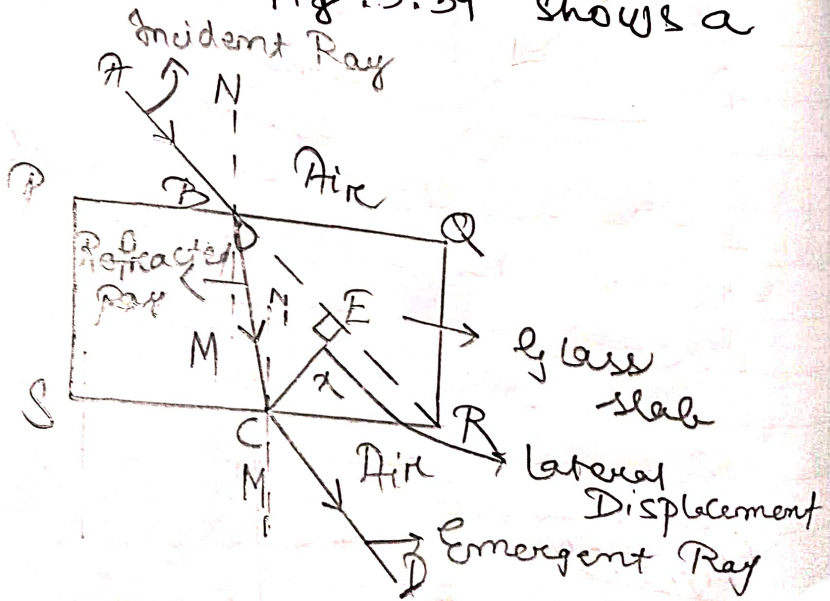
13) Draw a diagram showing the refraction of a light ray from water to glass. Label on it the incident ray, the angle of incidence i , and the angle of refraction (r) .

Ans



14) The diagram in Fig. 5.39 shows a

Ans →



ray of light AO, falling on rectangular glass slab PQRS. Complete the diagram till the ray of light emerges out of the slab. Label on the diagram the incident ray, the refracted ray and the emergent ray.

Ans

Done

15) Explain the following:

(a) A coin placed at the bottom of a vessel appears to be placed raised when water is poured in the vessel.

Ans When the water is poured in the glass vessel with a coin. It becomes visible and appears to be slightly raised from the initial position. This phenomenon is caused due to refraction of light. When the light ray bends, the eyes cannot visually catch that one as it can only receive and interpret

rectilinear propagation of light so it feels as if the coins are raised from the initial position and interprets the same.

- (b) A straight stick partly dipped in water ~~and~~ obliquely, appears to be bent at the surface of water.

Ans This observation occurs due to the refraction of light. When the ~~two~~ light rays pass through one optical transparent medium to other it bends depending on the optical density of the medium & the speed of light.

- (c) The sun is seen before the sunrise and after the sunset.

Ans As the atmospheric layers are warmer than the layers near the earth's surface, so the light of the sun bends

suffers refraction from a rarer to a denser layer P so it bends towards the normal at each refraction. Due to the continuous bending of light rays at different successive layers, the sun can be seen even when its actual position is just below the horizon. Thus the sun can be seen before the sunrise and after the sunset.

(16) What is a mirage? Give a reason for its formation.

Ans → In hot sunny days, an inverted image of a tree is seen which gives a false impression of water under the tree. This is called a mirage.

A reason of mirage is the refraction of light. So, the layers of air ~~is~~ Due to continuous bending of light and again reflection of light the observer see an inverted image of the tree.