H.W
30.06.21

Worksheet {Right}

Q1. What are the two conditions required for total internal reflection?

Ans: The two condition required for total internal reflection are
i. Angle of incidence should be greater than the critical angle.
ii. Ray should travel from denser medium to rarer medium.

Q2. A fish in the pond of water appears at a depth of 6 cm. What is the actual depth of fish if the refractive index of air wrt. water is $\frac{3}{4}$?

Ans:

$$\frac{\text{Actual depth}}{\text{Apparent depth}} = \text{Refractive index}$$

Let the actual depth be x.

ATQ

$$\frac{x}{6} = \frac{3}{4}$$

$$\Rightarrow 4x = 18$$

$$\Rightarrow x = \frac{18}{4} = 4.5 \text{ cm}$$

∴ the actual depth is 4.5 cm

Date
Page

Q3. A rectangular glass slab of thickness 8cm is placed on a figure. The eye is kept exactly above this slab. If the refractive index of glass is 1.6, then by what distance the figure will appear to raised?

Ans: Apparent depth = $\frac{\text{Actual depth}}{\text{Refractive index}}$

Apparent depth = $\frac{8}{1.6}$

= $\frac{80}{16}$ = 5cm.

Normal shift = Actual depth − Apparent depth

= 8 − 5

= 3cm.