

17) What are the two conditions required for internal reflection?

- the light should be in more dense medium and approaching the less dense medium.
- the angle of incidence is greater than the critical angle.

27) A fish in the pond of water appears at a depth of 6 cm. What is the actual depth of the fish if the refractive index w.r.t water is  $\frac{3}{2}$ ?

$$\begin{aligned} \text{Actual depth} &= \text{refractive index} \times \text{apparent depth} \\ &= \frac{3}{2} \times 6 \\ &= 9 \text{ cm} \end{aligned}$$

37) A rectangular glass slab of thickness 8 cm 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 be raised?

$$\text{Apparent depth} = \frac{\text{real depth}}{\text{refractive index}}$$

$$\frac{8 \times 10}{1.6 \times 10} = \frac{80}{16} = 5 \text{ cm}$$

$$= \text{Normal} = \text{real depth} - \text{apparent depth}$$

$$= 8 - 5$$
$$= 3 \text{ cm.}$$