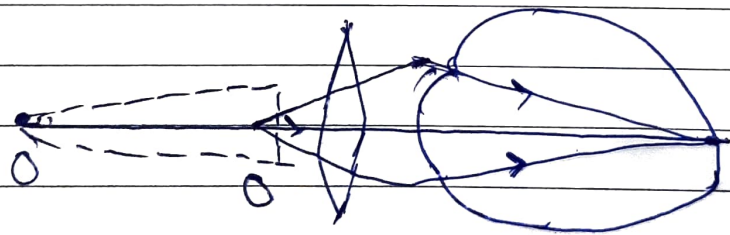
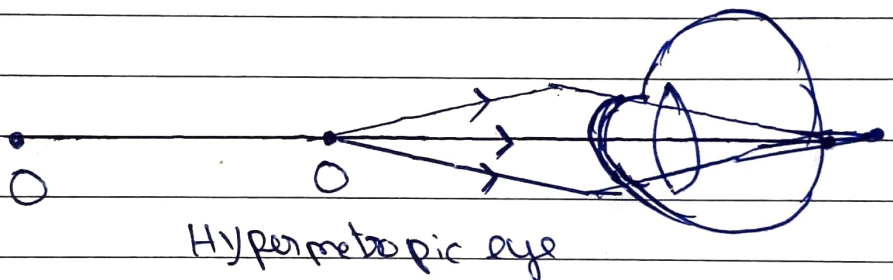


PHYSICS-10

Human eye

Q1) An normal eye cannot see clearly the objects that are placed closer than 25cm because the power of accommodation of the eye is 25cm which is exhausted. When the maximum accommodation of the eye is reached, the ciliary muscles of the eye lens cannot become thicker.

Q2) Hypermetropia is corrected using a convex lens of appropriate power.



correction using convex lens

The convex lens required to correct hypermetropic

$$U = -25 \quad V = -1\text{m} = -100\text{cm}$$

Using lense formula: $\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$

$$\frac{1}{f} = -\frac{1}{100} - \frac{1}{25}$$

$$= -\frac{1}{100} + \frac{1}{25}$$

$$= -\frac{1+4}{100}$$

$$= -\frac{3}{100} \text{ m}^{-1}$$

Power :: $P = \frac{1}{f}$
 $= \frac{3}{100} \cdot 100 \text{ D}$
 $P = 3 \text{ D}$

Q3) A near point is the limit to the eye's accommodation range. The near point of the eye is the minimum distance of the object from the eye, which can be seen distinctly without strain. For a normal human eye, this distance is 25 cm. Hypermetropia is a condition in which the eye can't see close object properly.

Q4) A student has difficulty in reading the blackboard while sitting in the last row. It shows that he is unable to see distant objects clearly. He is suffering from myopia. This defect can be corrected by using a concave lens.