

**Q3. The near vision of an average person is 25 cm. To view an object with an angular magnification of 10, what should be the power of the microscope?**

**Ans:** The least distance of distinct vision of an average person (i.e.,  $D$ ) is 25cm, in order to view an object with magnification 10,

Here,  $v = D = 25$  cm and  $u = f$

But the magnification  $m = v/u = D/f$

$$m = D/f$$

$$\Rightarrow f = D/m = 25/10 = 2.5 = 0.025\text{m}$$

$$P = 1/0.025 = 40\text{D}$$

This is the required power of lens