

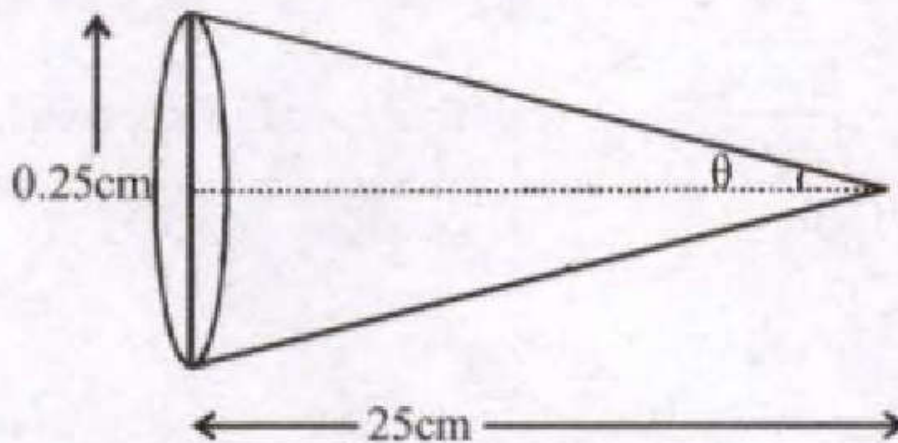
Q 02

Assuming human pupil to have a radius of 0.25 cm and a comfortable viewing distance of 25 cm, the minimum separation between two objects that human eye can resolve at 500 nm wavelength is : **[Main 2015]**

- (a)  $100\mu\text{m}$  (b)  $300\mu\text{m}$  (c)  $1\mu\text{m}$  (d)  $30\mu\text{m}$

ANS

(d)  $\sin \theta = \frac{0.25}{25} = \frac{1}{100}$



Resolving power =  $\frac{1.22\lambda}{2\mu \sin \theta} = 30\mu\text{m}.$