Q 04

Diameter of the objective lens of a telescope is 250 cm. For light of wavelength 600 nm. Coming from a distant object, the limit of resolution of the telescope is close to:

[Main 9 April 2019 II]

(a) 1.5×10^{-7} rad (b) 2.0×10^{-7} rad

(c) 3.0×10^{-7} rad (d) 4.5×10^{-7} rad

ANS

(c) $\theta = \frac{1.22\lambda}{d} = \frac{1.22\times600\times10^{-9}}{250\times10^{-2}}$

$= 3.0\times10^{-7}$ rad