

SECTION-B

2. Differentiate the following :
 - a. Rayleigh and Mie Scattering
 - b. PIN and APD
3. With neat sketches explain the microbending and macrobending effects in optical fiber. How these effects can be minimized?
4. Derive an expression for the responsivity of an intrinsic photodiode in term of the quantum efficiency of the device and the wavelength of the incident radiation. Also find the wavelength at which quantum efficiency and responsivity are equal.
5. Explain with the help of a block diagram the major elements of an optical fiber communication system. Enlist the differences between general communication system and optical communication system.
6. A multimode step index fiber has a relative refractive index difference of 1% and a core refractive index of 1.5. The number of modes operating at a wavelength of 1300nm is 1100. Calculate the fiber core diameter.

SECTION-C

7. With neat sketches explain LED characteristics and derive the mathematical expression for internal and external quantum efficiencies.
8. Explain the concept of WDM and also the key system features of WDM with the help of a suitable block diagram.
9. Explain the convenient budget analysis for determining the dispersion limitation of an optical fiber link.