Optical Communication

Date: 26/06/2020

Time: 9:00 am to 3:00 pm (6 Hours)

Q.No. 1   A   Explain the difference between inter-modal and intra-modal dispersion?

B   What is the pulse spread caused by material dispersion if $\Delta\lambda$=0.5nm, L=2 km, and λ=1350nm?

Q.No. 2   A   Draw the electric circuit of LED and explain the function of each component.

B   What is homostructured and heterostructured LED. Also explain the drawbacks of homostructured LED and how does heterostructured LED cater these problems.

Q.No. 3   A   Explain these losses;
   i.   Attenuation
   ii.   Macrobending
   iii.   Microbending
   iv.   Scattering
   v.   Absorption

Q.No. 4   A   What is number of modes for graded-index fiber if d=50μm, NA =0.250 and operating wavelength is 1330nm?

B   A single mode fiber has the following parameters: numerical aperture NA =0.125 and relative index Δ=0.36%. Calculate n_1.