

SECTION-B

2. What are basic requirements of WDM system?
3. Which of the dominant nonlinear phenomenon limits the system performance in a long haul system? Also analyze combined effects of GVD and SPM.
4. What do you understand by double hetero structure? Draw schematic diagram of an edge emitting DH LED.
5. Differentiate between spontaneous emission and stimulated emission.
6. A step index fiber in air has a numerical aperture of 0.16, core refractive index 1.45 and core diameter 60 μm . Determine normalized frequency for the fiber.

SECTION-C

7. Explain the following mechanism associated with in optical fiber communication :
 - a) Quantum shot noise
 - b) Avalanche excess noise
 - c) Fiber mode partition noise
 - d) Thermal noise
8.
 - a) Describe with aid of suitable diagram the mechanism giving the emission of light from the LED.
 - b) Discuss the properties of LED in relation to its use as an optical source for communication.
9.
 - a) Describe the mechanism of emission of light from light emitting diode.
 - b) A double hetero junction In GaAsP LED operating at 1310 nm has radiative and non-radiative recombination times of 30 and 100 ns. The injected current is 40 mA. Calculate bulk recombination life time, Internal quantum efficiency and Internal power level.