

**ASSIGNMENT**  
**6<sup>th</sup> Semester Electronics Engineering**  
**OPTICAL FIBER COMMUNICATION**

**SECTION - A**

**Fill in the blanks: -**

**1×10**

1. Fiber optic transmission systems (FOTS) are based on the principle of -----
2. When the optical fibers bend, they suffer from the -----and ----- losses.
3. LASER stands for -----
4. The two most common photodetectors are -----and -----
5. An optical fiber consists of a -----
6. An optical source converts -----energy into -----energy.
7. EDFA stands for -----
8. The doping materials in Erbium Doped Fiber Amplifier is -----
9. The most common photo detector is -----
10. The unit of dispersion is -----

**SECTION –B**

**NOTE: Do any five questions.**

**3×5**

- 1) Explain the various noises found in optical detectors
- 2) Explain the working of optical fiber cable with various modes.
- 3) Why semiconductor Light Emitting Diode (LEDs) and Diode Lasers (LDs) are preferred as light source?
- 4) Explain the block diagram of optical fibre communication system .Write its applications.
- 5) What are differences between single mode fiber and multi mode fiber?
- 6) Explain the working of optical fiber cable with various modes.
- 7) What do you mean by scattering losses? Explain with suitable diagram.

**SECTION - C**

**NOTE: Do any five questions.**

**5×5**

- 1) What are the primary elements of optical fiber communication system? Explain with block diagram.
- 2) What do you mean by optical light source? Explain in detail about the different types of optical light source.
- 3) What is splicing technique? Why it is required in optical fiber communication? Explain various types of splicing.
- 4) Explain PIN diode and Avalanche photo diode (APD) in detail with suitable diagrams.
- 5) What do you mean by bending losses? Explain in brief.
- 6) Explain semiconductor Optical Amplifier (SOA) in detail.
- 7) Explain in detail the construction of an Optical Fiber cable.