

S.B. Roll No.....

OPTICAL FIBER COMMUNICATION
6th Exam/ECE/ETV/ECE-II/EEE/6186/8161/Nov'18

Duration: 3Hrs.

M.Marks:75

SECTION-A

Q1. Do as directed.

10x1.5=15

- a. The optical power budget is usually expressed in _____.
- b. The unit of dispersion is _____.
- c. The refractive index of multimode fiber changes _____.
- d. The pre-amplifier are used to provide small gain (T/F).
- e. SLED Stands for _____.
- f. Snell's law states that _____.
- g. _____ tells us about the information carrying capacity of the channel.
- h. Semiconductor LD's emits coherent light (T/F).
- i. MFD stands for _____.
- j. EDFA stands for _____.

SECTION-B

Q2. Attempt any five questions.

5x6=30

- i. Explain avalanche photodiode with suitable diagram.
- ii. Define Total Internal Reflection (TIR)? How it is useful in optical fiber communication?
- iii. Write advantages of optical fiber communication.
- iv. Explain the basic structure of an optical fiber?
- v. Explain the principle of light penetration in optical fiber cable.
- vi. What are the difference between single mode and multi mode fiber?
- vii. Write short note on :
a) Raman Scattering b) Absorption loss
- viii. What is dispersion? What are the different types of dispersion?

SECTION-C

Q3. Attempt any three questions.

3x10=30

- a. What do you mean by optical light source? Explain different types of optical sources.
- b. Draw and explain block diagram of optical fiber communication link.
- c. Define optical amplifiers. What are the different types of optical amplifiers? Explain briefly.
- d. Write Short notes on the following. **(any two)**
 - i. Stimulated emission
 - ii. Optical detectors
 - iii. SOA applications