S.B. Roll No.....

# OPTICAL FIBER COMMUNICATION

**6th/ECE/ETV/EEE/EMP/ECE(II)/6186/8161/6923/May'16**

**Duration 3 hrs** **M. Marks=75**

## SECTION A

**Q.1) Fill in the blanks:** **1.5x10=15**

I. The frequency range for optical fiber communication extends from.....
II. In optical fiber communication, repeaters are required at a distance of.....
III. One micron =..... of an inch.
IV. The attenuation losses are measured in terms of.....
V. Mie scattering losses always occur in.....direction.
VI. An optical light detector converts .....signal into.....signal.
VII. The term LASER stands for.....
VIII. The optical light detector is a part of .....section. i) SOA stands for.....
IX. EDFA stands for.....

## SECTION B

**Q.2) Attempt any FIVE** **6x5=30**

I. What do you mean by optical fiber communication?
II. Give the basic construction detail of an optical fiber cable.
III. What do you mean by an optical light source? How many types of optical light source are there.
IV. Explain in brief about: 1. PIN diode 2. APD
V. What is the operational difference between LED and LASER?
VI. Explain the basic operation of optical amplifier.
VII. Explain the basic principle of RAMAN amplifier?

## SECTION C

**Q.3) Attempt any THREE:** **10x3=30**

**a)** Explain in detail the various applications of optical fiber communication.
**b)** Explain scattering losses in detail. How many types of scattering losses are there? How we can reduce scattering losses?
**c)** Draw and explain the functional block diagram of transmitter & receiver used in optical fiber communication.
**d)** What is SOA? Explain its advantages, disadvantages and applications.