S.B. Roll No...

OPTICAL FIBER COMMUNICATION
5th /Electrical/0524/May'16

Duration: 3 Hrs   **M. Marks=75**

SECTION A

Q1.Fill in the blanks.   **1.5x10=15**
   a. Snell's law states that ……………. .
   b. The frequency range for optical fiber communication extends from………… to ……. .
   c. The refractive index profile for single mode optical fiber is ………. .
   d. The attenuation losses are measured in terms of …………….. .
   e. LED works on the principle of ………… .
   f. An optical light source converts ………… to ……………….. .
   g. The term LASER stands for……………….. .
   h. The optical fiber coupler are used for ……………….. .
   i. The PIN diode operates in ……………….region.
   j. Process of adding impurity to intrinsic semiconductor is called ……….

SECTION B

Q2.Attempt any SIX   **5x6=30**
   a. Explain the different types of optical fibers.
   b. List the advantages and disadvantages of optical fiber communication.
   c. What do you mean by material absorption?
   d. Describe the working principle pf emission of light from LED with neat diagram.
   e. What do you mean by optical splicing?
   f. What is the working principle of PIN diode.
   g. Give different types of optical amplifier.
   h. Explain numerical aperture.

SECTION C

Q3.Attempt any THREE   **10x3=30**
   a. Explain in detail about dispersion phenomenon. How many types of dispersion losses are there? How can we reduce dispersion losses?
   b. Explain construction and working of APD diode.
   c. Explain in detail with block diagram the optical fibre communication link.
   d. Write a short note on :
      I. Total internal reflection
     II. Critical angle
    III. Acceptance angle