

- Q.25 Write any 5 characteristics of LASER Diode.
- Q.26 Differentiate between Single mode and multimode optical fiber
- Q.27 Explain optical amplifier in detail.
- Q.28 Define fiber loss. Discuss alignment and joint loss in optical fiber
- Q.29 Write any 5 difference between LED and LASER.
- Q.30 Write a short note on fiber optical isolators.
- Q.31 Explain the different types of optical switches.
- Q.32 Discuss about optical frequency range.
- Q.33 Write a short note on wavelength division multiplexing.
- Q.34 Explain the working principle of PIN diode.
- Q.35 Explain the working principle of LASER Diode.

#### SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 Define fiber splices. Explain different types of splices in optical fiber.
- Q.37 Explain Avalanche photo diode (APD) in detail with suitable diagram.
- Q.38 Draw the structure of optical fiber and explain its components in detail.

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#### 6th Sem / Elect, EI, Elect & Eltx Engg. Subject:- Optical Fiber Communication

Time : 3Hrs.

M.M. : 100

#### SECTION-A

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Multimode step index fiber has \_\_\_\_\_
- Large core diameter & large numerical aperture
  - Large core diameter and small numerical aperture
  - Small core diameter and large numerical aperture
  - Small core diameter & small numerical aperture
- Q.2 Which fiber is used for long distance communication?
- Multimode fiber
  - Single-mode fiber
  - graded index fiber
  - none of the above
- Q.3 In optical communication \_\_\_\_\_ acts as a transmission medium
- coaxial cable
  - Optical fiber cable
  - Waveguide
  - None of the above
- Q.4 LED stand for \_\_\_\_\_
- Light emitting detector
  - Light emitting display

- c) Light emitting diode
  - d) Low emitting diode
- Q.5 A device, which converts optical energy into electrical energy is called as
- a) Photodetector                      b) Optical source
  - c) Amplifier                              d) None of the above
- Q.6 A permanent joint formed between two different optical fibers in the field is known as a \_\_\_\_\_.
- a) Fiber splice                              b) Fiber connector
  - c) Fiber attenuator                      d) Fiber dispersion
- Q.7 How many types of fiber splices exist?
- a) 3    b) 4
  - c) 2    d) None of the above
- Q.8 An optical fiber is made up of \_\_\_\_\_ material.
- a) Copper                                      b) Glass
  - c) Ceramic                                      d) None
- Q.9 Optical fiber works on the principle of \_\_\_\_\_
- a) Polarization
  - b) Total internal reflection
  - c) Diffraction
  - d) None of the above
- Q.10 What is refraction
- a) Reflection of light waves
  - b) Diffusion of light waves
  - c) Scattering of light waves
  - d) Bending of light waves

## SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 LED is a coherent source of light. (T/F)
- Q.12 Define light source.
- Q.13 Single mode fibers support only \_\_\_\_\_ mode of propagation. (One/Two)
- Q.14 Expand LED.
- Q.15 Tell the formula of numerical aperture.
- Q.16 The principle of LASER is \_\_\_\_\_. (Stimulated / Spontaneous emission)
- Q.17 Bandwidth of optical fiber is \_\_\_\_\_.
- Q.18 Give one advantage of Optical Fiber Communication
- Q.19 Expand WDM.
- Q.20 A single mode fiber has low intermodal dispersion than multimode fiber. (T/F)

## SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 List any 5 advantages of fiber optic communication.
- Q.22 Explain basic optical fiber communication system.
- Q.23 Explain connectors in optical fiber.
- Q.24 Write a short note on acceptance angle and critical angle.