

### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Explain the principle of transmission of optical fiber and also explain the total internal reflection
- Q.37 What is LED and also explain their structure and material characteristics.
- Q.38 Write a short note on any two.
- a) Optical isolator.
  - b) Optical Pyrometer
  - c) Acceleration

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### 6th Sem / Branch : Instrumentation & Control Sub.: Opto Electronic Devices and their Application

Time : 3Hrs.

M.M. : 100

### SECTION-A

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

- Q.1 LED stands for
- a) Light emit diode      b) Light emitting diode
  - c) Laser emitted diode      d) None
- Q.2 Optical fiber work on the phenomenon
- a) Total internal reflection
  - b) Polarization
  - c) Absorption
  - d) Attenuation
- Q.3 Refractive index of glass
- a) 1.5      b) 2.5
  - c) 3.5      d) 0.5
- Q.4 Velocity =
- a) Time/Distance
  - b) Acceleration/Distance
  - c) Acceleration/Time
  - d) Distance/Time
- Q.5 Which material is preferred to making the core of optical fiber
- a) Air      b) Diamond
  - c) Glass      d) Quartz

- Q.6 LED is a type of semiconductor  
 a) Direct band gap      b) Indirect band gap  
 c) Both A and B      d) None of these
- Q.7 In optical fiber communication the signal source is  
 a) Light      b) Infrared  
 c) Radio      d) Wave frequency
- Q.8 In optical fiber the outer layer \_\_\_\_\_ and inner layer is  
 a) Core, cladding      b) Cladding, core  
 c) Transmit, reflect      d) Reflect, Transmit
- Q.9 In optical fiber the fiber core, the cladding  
 a) Is denser than      b) Has the same density  
 c) Is less dense than      d) Is another name for
- Q.10 LDR stand for  
 a) Light depended resistor  
 b) Light diode register  
 c) Laser diode register  
 d) None

### SECTION-B

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

- Q.11 What is photo electric effect?  
 Q.12 What is Reflection?  
 Q.13 Draw the symbol of LED.  
 Q.14 What is Avalanche photo diode.  
 Q.15 What is the power LED?  
 Q.16 Draw the symbol of photo diode?  
 Q.17 Write full form of LASER.

- Q.18 Write the full form of LED.  
 Q.19 What is the infrared thermometer?  
 Q.20 Define optical filter.

### SECTION-C

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

- Q.21 What are characteristics of optical fiber  
 Q.22 What is the refractive index?  
 Q.23 Write a note on any two :  
 a) Reflection      b) Refraction  
 c) Polarization
- Q.24 Explain PIN diode.  
 Q.25 Explain the critical angle.  
 Q.26 Explain the Photo transistor.  
 Q.27 Explain the classification of optical fiber material.  
 Q.28 Explain the coupling in optical fiber?  
 Q.29 Explain the photo-transistor.  
 Q.30 Explain the efficiency.  
 Q.31 What is Photo electric effect?  
 Q.32 Write a industrial application of Laser.  
 Q.33 Explain the infrared and ultra violet source.  
 Q.34 What is photo electric field?  
 Q.35 What are the Characteristics of LED.