S. B. Roll. No.....

OPTICAL FIBER COMMUNICATION
5th Exam/ECE/2617/Nov'24
(For 2018 Batch Onwards)

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

SECTION-A

Q1. Do as directed. **15x1=15**

a. Write the frequency range for optical fiber communication.
b. The principle of light propagation in optical fiber is based on the phenomenon of_____.
c. Name the inner part of the fiber which guides the light.
d. Define acceptance angle.
e. Write the unit of attenuation.
f. The unit of dispersion is _____.
g. LED stands for?
h. ILD stands for?
i. SOA stands for?
j. EDFA stands for?
k. NFS stands for?
l. The main disadvantage of EDFA is _____.
m. NGN stands for?
n. Refractive index of core is higher than that of cladding. (T/F).
o. The refractive index of multimode fiber changes gradually. (T/F)

SECTION-B

Q2. Attempt any six questions. **6x5=30**

i. What are the various advantages of Optical Fiber Communication?
ii. Explain the principle of light penetration in optical fiber cable.
iii. Explain the advantages of Multi Mode Graded Index Fiber over Multi Mode Step Index Fiber.
iv. What is dispersion? Write down the names of its types.
v. Explain in brief the types of bending losses.
vi. Write down the characteristics of any optical light source.
vii. Explain the various noises found in optical detectors.
viii. Discuss the principle of operation of SOA.
ix. Write a short note on IOT.

SECTION-C

Q3. Attempt any three questions. **3x10=30**

a. Explain the block diagram of basic communication system.
b. Explain single mode and multi mode fibers.
c. What do you mean by scattering losses? Explain with suitable diagram.
d. Discuss the principle of operation of LED.
e. Write a short note on i) PIN diode ii) APD