

Roll No.

Total No. of Pages : 01

Total No. of Questions : 08

M.Tech. (ECE) (Sem.-1)

OPTICAL COMMUNICATION SYSTEM

Subject Code : MTEC-PE2Y-18-5

M.Code : 75181

Date of Examination : 23-01-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **Attempt any FIVE questions out of EIGHT questions.**
2. **Each question carries TWELVE marks.**
 1. List and explain fiber fabrication methods in detail.
 2.
 - a) Compare step index and graded index fiber in detail.
 - b) Explain in detail the principle of light transmission through a fiber.
 3.
 - a) Define the quantum efficiency and the responsivity of a photodetector.
 - b) Discuss briefly the basic fiber optic communication system with neat sketch.
 4. Explain semiconductor photodiodes and Avalanche photodiodes with their characteristics in detail.
 5.
 - a) State and explain problems associated with optical OFDM.
 - b) Explain the concept of optical windows for fiber optic transmission system.
 6. Discuss optical communication techniques and network topologies in detail.
 7.
 - a) Write a brief note on numerical aperture measurement.
 - b) What is the need of OFDM in optical communication system? Also list various applications of OFDM.
 8.
 - a) Explain fusion and mechanical splicing technique in detail.
 - b) Write short note on following :
 - i) Peak to Average power ratio
 - ii) Scattering
 - iii) Attenuation

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.