

Roll No.

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BT-7/D11 : 7819

ECE-405E : Optical Communication

Time : Three Hours

Maximum Marks : 100

Note:- Attempt any five

UNIT - I

- Q.1. a) What is the role of cladding in optical fibers and how does the numerical aperture decide the light propagation in the fiber ? 10
- b) Distinguish between step index and graded index fiber. Explain with an example how latter is use ful in OFC system? 10

OR

- Q.2 a) Write a short note on 20
- a) Modes of Propagation in fibers.
- b) Fiber splices and connectors

UNIT - II

- Q.3. Explain the different loss mechanisms in the fibers and techniques used to minimize them? 20

OR

- Q.4 What are the different dispersion effects in optical fibers and how does it affect the OFC performance. 20

UNIT - III

- Q.5 Discuss the working principle of LEDs and injection lasers and explain why the latter is quite popular for wide area networks? 20

OR

- Q.6 a) What is the operating principle of Pn junction based photo detector and explain why P-i-n diodes are most widely used in OFC systems ?
b) Explain the working principle of APD (avalanche Photo diode) and what are their advantages and limitations? 10+10

UNIT - IV

- Q.7 a) What are the various modulation schemes used in OFC ? 10
b) What are the constituents of a typical optical fiber network? 10
- Q.8 Write a short note on: 20
- a) Optical coupler
 - b) Wavelength Division multiplexer
 - c) Optical amplifier
 - d) Hybrid & photonic network