

Code No: I8206/R16

M. Tech. I Semester Regular Examinations, January-2017

OPTICAL COMMUNICATIONS TECHNOLOGY

Common to Microwave and Communication Engineering (82), DECS (38), ECE (70),
DECE (37) and Communication Systems (47)

Time: 3 Hours

Max. Marks: 60

Answer any FIVE Questions
All Questions Carry Equal Marks

1. a What is dispersion in fibers? What are the causes and types of fiber dispersion loss? [6]
Explain.
- b Explain the principle and applications of solitons. [6]
2. a Explain the edge and surface emitter LED structure with a neat diagram. [6]
b Explain the principle of Mach Zander interferometer with a neat diagram. [6]
3. a What are the functions of optical switches? Explain. [6]
b Explain the principle of optical circulator with the help of a neat diagram. [6]
4. a Explain the Duobinary optical modulation scheme with necessary diagrams. [6]
b What is the need for equalization in optical receivers? Explain. [6]
5. a What are the different types of error detection codes in optical system? Explain. [6]
b What are the different types of demodulation techniques used in optical receivers? [6]
Explain any one.
6. a Explain the principle of operation of semiconductor optical amplifier. [6]
b What are the different crosstalk reduction techniques in an optical system? Explain. [6]
7. a Explain the architecture of SONET/SDH with a neat diagram. [6]
b What are the different non-linear effects in optical network? Explain. [6]
8. Write short notes on
a Four Wave Mixing. [6]
b Bragg Gratings. [6]
