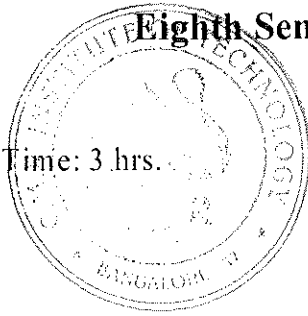


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10TE81



Eighth Semester B.E. Degree Examination, June/July 2016
Optical Networking

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. With the help of a diagram, explain the different parts of a public networks. (06 Marks)
- b. Explain fixed and statistical TDM. (06 Marks)
- c. Describe the self phase modulation and cross phase modulation. (08 Marks)
- 2 a. What are isolators and circulators? Explain a polarization independent isolator. (10 Marks)
- b. Describe different architectural approaches to construct high channel count de-multiplexers. Explain multistage banding with diagram. (10 Marks)
- 3 a. Realize strict-sense nonblocking 1024×1024 switch using 32×64 and 32×32 switches interconnected in a three-stage cros architecture. (10 Marks)
- b. What are wavelength converters? Explain how wavelength conversion is done by optoelectronic approach. (10 Marks)
- 4 a. Explain in brief the following:
 - i) Power penalty
 - ii) Transmitter
 - iii) Receiver
 (06 Marks)
- b. Explain with a figure the gain equalization in Erbium doped fiber amplifiers. (06 Marks)
- c. Describe in detail the intrachannel and interchannel crosstalk. (08 Marks)

PART – B

- 5 a. Explain the hierarchical multiplexing structure employed in SONET and SDH. (10 Marks)
- b. Discuss in detail the elements of SONET/SDH infrastructure. (10 Marks)
- 6 a. What are different types of wavelength conversion technique? Explain limited wavelength conversion and full wavelength conversion with a neat sketch. (10 Marks)
- b. In a wavelength routing networks, what are architectural variations? (10 Marks)
- 7 a. Explain combined SONET/WDM network design problem. (10 Marks)
- b. Explain network management function. (10 Marks)
- 8 a. Explain the following:
 - i) Hybrid fiber Coax (HFC) approach
 - ii) LARNET WRPON architecture
 (14 Marks)
- b. Explain Synchronization. (06 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. $42+8=50$, will be treated as malpractice.