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10EC833

Eighth Semester B.E. Degree Examination, June/July 2018
Optical Networks

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting atleast TWO questions from each part.***

PART – A

1 a. Explain the architecture of WDM wavelength routing network used in second generation optical network. **(10 Marks)**

b. Explain the non-linear effects of the following :
(i) SPM (Self phase modulation)
(ii) Four wave mixing. **(10 Marks)**

2 a. Explain the following :
(i) A polarization independent isolator
(ii) Optical add/drop element based on fiber Bragg grating **(10 Marks)**

b. Explain Erbium - doped fiber amplifiers. **(10 Marks)**

3 a. What are the main considerations in building large switches? Explain three stages clos architecture. **(10 Marks)**

b. What is opto-electronic approach for regeneration? Explain three different types of optoelectric regeneration. **(10 Marks)**

4 a. What is dispersion? Explain chromatic dispersion limits. **(10 Marks)**

b. Explain overall design considerations. **(10 Marks)**

PART – B

5 a. What are the advantages of SONET/SDH over PDH? **(10 Marks)**

b. Explain the elements of a SONET/SDH infrastructure. **(10 Marks)**

6 a. Explain reconfigurable OADM architecture. **(10 Marks)**

b. Write short notes on :
(i) Wavelength conversion in WDM networking
(ii) Routing and wavelength assignment. **(10 Marks)**

7 a. Explain network management functions and discuss about management framework. **(10 Marks)**

b. Explain configuration management. **(10 Marks)**

8 a. Explain the following concepts of access network :
(i) Architecture
(ii) Classification **(10 Marks)**

b. Explain Hybrid fiber Coax Approach (HFC) and Fiber to the Curb Approach (FTTC). **(10 Marks)**

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