

Seat No: _____

GANPAT UNIVERSITY
B. TECH SEM. VII ELECTRONICS & COMMUNICATION ENGINEERING
CBCS REGULAR EXAMINATION NOV-DEC 2014
2EC706[ELECTIVE III(A)] OPTICAL SWITCHING AND NETWORKS

TIME: 3 HOURS

TOTAL MARKS: 70

INSTRUCTIONS:

1. Attempt all questions.
2. Answers to the two sections must be written in separate answer books.
3. Figures to the right indicate full marks.
4. Assume suitable data, if necessary.

SECTION-I

- Que.-1 (A) Give the difference between node with fixed wavelength conversion capability and limited wavelength conversion capability with necessary drawing. 7
- (B) Describe optical line terminal with necessary drawing. Why optical amplifier is needed for long distance optical link? 5
- OR**
- Que.-1 (A) Define optical cross connect. Discuss about different scenarios for optical cross connect deployment. 7
- (B) What is the impact of traffic changes on a network using serial OADMs? Discuss this with the help of necessary drawing. 5
- Que.-2 (A) Describe three wavelength routing schemes with example of small optical network containing six nodes. 6
- (B) What is Relative Capacity Loss (RCL)? Give the details of RCL with necessary example. 5
- OR**
- Que.-2 (A) Describe Parallel, Serial and Modular version of parallel architectures of Optical Add Drop Multiplexers. 6
- (B) What is Distributed Relative Capacity Loss (DRCL)? Give details of DRCL with necessary example. 5
- Que.-3 (A) Write short note on Optical Networks Evolution. 6
- (B) Describe WDM wavelength routing network. 6

SECTION-II

- Que.-4** (A) Describe all-optical four-node network configuration. 4
(B) Why Reconfigurable OADMs are required in optical networks? Give the detail of Reconfigurable OADM Architectures. 6
(C) What is the role of optical add/drop multiplexer? 2
- OR**
- Que.-4** (A) Discuss about point to point WDM (PWDM) ring architecture. 4
(B) How optical add/drop multiplexer is used in three node linear network? Draw the necessary diagram and discuss about it. 6
(C) Define fixed-alternate routing. 2
- Que.-5** (A) What is the role of optical switch in optical networks? Describe a switch with dedicated converters at each output port for each wavelength. 6
(B) Describe Node Architecture of SONET over WDM for traffic grooming. 5
- OR**
- Que.-5** (A) Describe share per node wavelength convertible switch architecture. Why such type of architecture is required in optical networks? 6
(B) Discuss about bandwidth growth over time in different types of networks. 5
- Que.-6** (A) Why Optical Multicasting is useful in optical networks? Draw and explain Opaque Switch Architecture. 7
(B) Write short note on contention resolution in optical packet switched networks. 5

End of Paper