Printed pages: 02 **Sub Code: MTEC 041**

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M. TECH.
(SEM II)THEORY EXAMINATION 2018-19
ADVANCED OPTICAL NETWORKS

Time: 3 Hours ***Total Marks: 70***

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 7 = 14

a. What are the types of WDM and mention their advantages
b. What are the types of MPLS nodes?
c. What is path protection switching?
d. Define Point to point topology.
e. Mention the importance of multiplexing.
f. List the applications of tunable DWDM Lasers.
g. What is the function of line protection and path protection switching?

SECTION B

2. Attempt any *three* of the following: 7 x 3 = 21

a. Explain the principle of operation of WDM in optical communication with its advantages and disadvantages.
b. Explain the functionalities of MPLS nodes.
c. Summarize the relationship between OXC and MPLS Operations with the help of a diagram.
d. What are the various types of Network Topologies? Explain
e. Explain about the benefits of using SONET/SDH compared to other networks.

SECTION C

3. Attempt any *one* part of the following: 7 x 1 = 7

(a) Explain the different multiplexing techniques in optical networks.

(b) Organize the details of MPLS Traffic Engineering and traffic oriented performance.

4. Attempt any *one* part of the following: 7 x 1 = 7

(a) Explain the advantages of switching in optical networks and how IP forwarding differs from label switching in optical networks?

(b) Illustrate the role of Optical Add/Drop Multiplexer (OADM) in providing cost effective means of handling traffic in optical networks.

5. Attempt any *one* part of the following: 7 x 1 = 7

(a) Briefly explain the SDH frame structure and show that the basic bit rate is 51.84 Mbps.

(b) Explain the basic SONET transmission format with the aid of a diagram.

6. Attempt any *one* part of the following: 7 x 1 = 7

(a) Explain Link Management protocol (LMP).

(b) Explain Optical compilers. What is Time multiplex multiprocessor?

7. Attempt any *one* part of the following: 7 x 1 = 7

(a) Mention the details of SONET and SDH Multiplexing hierarchy with a detailed diagram.

(b) Explain the different kinds of protection switching.

Dr. Rajesh Tewari | 24-May-2019 13:37:20 | 139.5.198.30

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