R09

Code No: D7006, D6505, D3806

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH II - SEMESTER EXAMINATIONS, APRIL/MAY 2012
OPTICAL NETWORKS
(COMMON TO ELECTRONICS & COMMUNICATION ENGINEERING, WIRELESS AND MOBILE COMMUNICATIONS, DIGITAL ELECTRONICS AND COMMUNICATION SYSTEMS)

Time: 3hours **Max. Marks: 60**

Answer any five questions
All questions carry equal marks

\- - -

1.a) What do you mean by Second-Generation and third generation Optical Networks?
b) Explain about a multiplexed layered hierarchy in an optical Network.

2.a) For the wavelength assignment (WA) problem, what are the constraint that the assignments must obey.
b) Explain the operation of the following:
i) Optical line Terminals & Amplifiers
ii) Add/Drop Multiplexers.

3.a) Explain about the different types of protection techniques for point-to-point links.
b) Describe about Unidirectional Path-Switched Rings network and Self-Healing Rings network.

4.a) Why is that there is a strong need for protection in the optical layer, despite the existence of protection mechanisms in the client layers?
b) Compare between 1 + 1 OMS Protection and 1:1 OMS protection scheme.

5.a) What do you mean by Gigabit Ethernet? Explain its characteristics.
b) Briefly explain about storage Area Networks.

6.a) Explain about the Interoperability between WDM systems from different vendors with the help of a neat diagram.
b) Illustrate about the OTDM process with the help of a neat diagram.

7.a) How to achieve Contention Resolution in an optical network using wavelengths?
b) Write short notes on the followings
(i) Input Buffering
(ii) Recirculation Buffering
(iii) Deflection Routing
(iv) Photonics Switching

8.a) Explain about Service Availability, Reliability and Restorability in a WDM network.
b) What are the major limitation issues in wavelength conversion process?

****