

Exam.Code:0932  
Sub. Code: 6635

2053  
B.E. (Electronics and Communication Engineering)  
Eighth Semester  
EC-803: Optical Networks

Time allowed: 3 Hours

Max. Marks: 50

*NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.*

*x-x-x*

I. Attempt the following:-

- a) What are the challenges of optical WDM networks?
- b) Explain the principle behind channel equalizers in correspondence to optical networking.
- c) Explain gigabit Ethernet.
- d) What are the issues in wavelength routed networks.
- e) What are the probable ways in which WDM networks can be interconnected?

(5x2)

**UNIT - I**

- II. a) What is the basic characteristic and bandwidth of WDM?  
b) What are the limitations of using broadcast and select WDM optical networks in wide area networks how they are overcome? Further graphically explain Broadcast and Select Multichip WDM Network. (2x5)
- III. a) What are the parameters of tunable optical filters that need to be considered to design typical optical network.  
b) What phenomenon determines the bandwidth of an EDFA? (2x5)
- IV. a) Differentiate between single hop and multiple hop optical networks and their limitations.  
b) What are the Characteristics of a Basic multi-Hop optical network? (2x5)

P.T.O.

(2)

**UNIT - II**

- V. a) What are the types of optical switching and explain packet switching method in particular?  
b) Apart of amplification, how SOA-can be used as switching component in optical networking. (2x5)
- VI. a) Briefly explain traffic grooming in SONET ring and WDM ring in respect to optical metro networks.  
b) Differentiate between PON, EPON and WDM PON in respect of optical access networks. (2x5)
- VII. a) Explain with the help of diagrams exhaust routing, least congested path routing networks.  
b) What is the advantage of radio over fiber? (2x5)

x-x-x