Exam.Code:0932
Sub. Code: 33699

2055

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 Section.

x-x-x

1. a) Discuss the use of channel equalizers in an optical network. (5×2)
   b) State the principle behind wavelength converter in optical networking.
   c) What do you understand by electronic bottleneck? Discuss in context with optical networks.
   d) What is meant by the contention resolution in OPS networks?
   e) What is the difference between tunable and fixed optical filters?

Section A

2. a) Explain architecture of optical network with a suitable diagram. Enlist the various advantages of optical network. (5)
   b) Differentiate between the doped fiber amplifier and Raman amplifier. (5)
3. a) Discuss the various types of optical transmitters. Explain the characteristics of LASER with a suitable diagram. (5)
   b) In which type of network, single hop or multi hops, is a smaller tuning latency more critical? Why? (5)
4. a) In a WDM network node, if two signals on the same wavelength arriving from different input ports need to go to the same output port, then a conflict may occur. Describe two methods for resolving this conflict (5)
   b) Explain wavelength routed optical WDM network with example. (5)

Section B

5. a) What are the header and packet format for slotted network? (5)
   b) What are the challenges in access networks and explain principle of operation of EPON. (5)
6. a) Discuss various issues and solution involved in wavelength routed networks. (5)
   b) What are the switching schemes for WDM networks? Compare them with OBS. (5)
7. a) How traffic grooming can be possible in SONET ring networks. Explain with example. (5)
   b) Write short notes on Exhaust routing and Least congested path routing. (5)

x-x-x