USN ☐☐☐☐☐☐☐☐☐☐ **14ECS24**
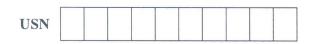
Second Semester M.Tech. Degree Examination, June/July 2018
Optical Communication and Networking

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions.*

1 a. Explain the non linear effects based on (i) Effective length and area (ii) Stimulated Raman scattering   (iii) Propagation in a nonlinear medium. **(12 Marks)**
   b. Explain term solitons. **(08 Marks)**

2 a. Explain the practical direct detection receiver. **(08 Marks)**
   b. Explain how probability density functions for the observed photo current. **(12 Marks)**

3 a. Discuss the each impairment results in a power penalty to the system. **(10 Marks)**
   b. Explain the different configuration used in amplifiers. **(10 Marks)**

4 a. Explain the variety of physical layer are used for SONET/SDH depending on the bit rates and distances. **(10 Marks)**
   b. Explain different types of SONET equipment deployed in a network. **(10 Marks)**

5 a. Explain how three different light path topologies that can be deployed over a fiber ring topologies. **(10 Marks)**
   b. Explain the statistical traffic models can be used in solving the dimensioning models problem. **(10 Marks)**

6 a. Explain the key attributes of managing light path service and interfacing. **(10 Marks)**
   b. Explain the terms interms of performance and Fault management (i) The impact of transparency   (ii) Alarm management. **(10 Marks)**

7 a. Explain the functions of ATM. **(10 Marks)**
   b. Describe the ATM adaptation layers of AAL-1, AAL-5. **(10 Marks)**

8   Write short note on (any four):
   a. Four wave mixing.
   b. Couplers.
   c. Multiplexers.
   d. Interferometers.
   e. Circulators.
   f. Gratings. **(20 Marks)**

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