Seventh Semester B.Tech. Degree Examination, June 2018
(2008 Scheme)
08.702 : OPTICAL COMMUNICATION (T)

Time : 3 Hours
Max. Marks : 100

PART – I

Answer all questions:

1. Explain different modes of fibers.
2. What are the dispersions occurring in optical transmission?
4. What are the different types of doped fiber amplifiers?
5. What is GH effect? Explain dispersive radiations.
6. Explain about optical pre-amplifiers.
7. What are the advantages of LDs over LEDs?
8. What is soliton?
9. Compare WDM and DWDM.
10. A multimode step index fibre with a core diameter of 60 µm and a relative refractive index difference of 1% is operating at a wavelength of 0.80 µm. If the refractive index of the core is 1.5 determine the:
   a) Normalised frequency of the fiber.
   b) Approximate number of modes it will support.

   (4x10=40 Marks)

PART – II

Answer any 2 questions from each Module:

Module – I

11. With neat diagrams, explain the vapour phase oxidation process in fiber manufacture.

12. With necessary diagrams, explain the working of PIN photodetector.

P.T.O.
13. Explain effects of Laser diode nonlinearity and noise in fiber communications. 10

**Module – II**

14. Explain the working of ASK heterodyne detection system and derive an expression for the Bit Error Rate (BER). 10

15. With relevant sketches explain the principle of working of EDFA. 10

16. Explain how OTDR is used for fault detection, length and refractive index measurements. 10

**Module – III**

17. Discuss the system design constraints in soliton lightwave transmission system. 10

18. Discuss the importance of ADM and wavelength tunable sources in WDM systems. 10

19. Write notes on:
   a) Light Wave Networks 10
   b) Soliton lasers.

(6×10=60 Marks)