

EXTC / VII / CBGS / OCN / 08-12-2016 | Q.P. Code : 788702

Optical Communication & Network



(3 Hours)

[Total Marks : 80

- N.B. :** (1) Question no.1 is compulsory.
(2) Attempt any **three** questions from remaining questions.
(3) **Figures** to the right indicate **full** marks.

1. Attempt any **four** of the following :- 20
 - a) Compare intermodal and intramodal dispersion.
 - b) Explain the basic working principle of Lasers.
 - c) Differentiate between the optical components isolator and circulator.
 - d) Explain the concept of Bragg Grating.
 - e) Define crosstalk .What are the types of crosstalk in optical transmission system?

2.
 - a) Derive the expression for pulse spreading in intermodal dispersion. 10
 - b) Draw architecture of SONET/SDH and explain in brief. 10

3.
 - a) Explain Material attenuation in optical fiber communication. 6
 - b) What do you mean by bit interleaving and packet interleaving? 7
 - c) Derive the expression of Power Penalty with impairment and without impairment. 7

4.
 - a) Explain SPM and how it is mitigated by GVD. 8
 - b) Explain four waves mixing. 8
 - c) Comment on need of Wavelength stabilization. 4

5.
 - a) Explain important network management functions to the operation of the Network. 8
 - b) What is micro bending loss? Explain how to minimize the these losses with neat sketch. 8
 - c) How DWDM is different from WDM? 4

6. Write a short notes on :- 20
 - i) Link Budget
 - ii) Dispersion and OTDR
 - iii) Optical Access Network
 - iv) WDM network element and architecture
