Sem- VII / EXTC / CBGS / OCN&W / 25-05-16

Optical Communication & Networks

Q.P. Code : 31346

(3 Hours) **[Total Marks :80**

N.B. : (1) **Question** No. **1** is **compulsory**.
(2) Solve any **three** questions out of remaining **five** questions.
(3) **Figures** to the **right** indicates **full** marks.
(4) Assume suitable data wherever necessary and justify the same.

1. Solve following. **20**
   (a) Compare between intermodal and intramodal dispersion.
   (b) What is the concept of bit interleaving and packet interleaving.
   (c) What are the elements of SONET/SDH infrastructure.
   (d) Explain the working principle of optical switches.

2. (a) Derive the expression for cut off wavelength for single mode transmission. **10**
   (b) Explain OTDR with neat sketch. **10**

3. (a) Give the details of network management in a typical optical Network. **10**
   (b) Explain the sources of loss at a fiber joint. **10**

4. (a) What are the sources of micro bending loss ? How it can be overcomed ? **5**
   (b) Differenciate between Circulator and Isolator. **5**
   (c) Explain SONET architecture in detail. **10**

5. (a) What is WDM ? Explain the architecture of WDM with network component. **10**
   (b) Comment on optical assess networks. **5**
   (c) Comment on optical safety in communication Network. **5**

6. (a) Highlight need of link budget what are the strategies of link budget in optical communication Network. **10**
   (b) A silica optical fiber has core refrative index of 1.5 and cladding refrative index 1.47 Determine. **10**
   (i) The critical angle.
   (ii) Numeracal aperture.
   (iii) The acceptance angle.
