

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.

Solve following.

(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.

(b) Explain OTDR with neat sketch.

3. (a) Give the details of network management in a typical optical Network.

(b) Explain the sources of loss at a fiber joint.

4. (a) What are the sources of micro bending loss ? How it can be overcome ?

(b) Differentiate between Circulator and Isolator.

(c) Explain SONET architecture in detail.

5. (a) What is WDM ? Explain the architecture of WDM with network component.

(b) Comment on optical access networks.

(c) Comment on optical safety in communication Network.

6. (a) Highlight need of link budget what are the strategies of link budget in optical communication Network.

(b) A silica optical fiber has core refractive index of 1.5 and cladding refractive index 1.47 Determine.

(i) The critical angle.

(ii) Numerical aperture.

(iii) The acceptance angle.