

B.TECH.**THEORY EXAMINATION (SEM-VIII) 2016-17****OPTICAL NETWORKS****Time : 3 Hours****Max. Marks : 100****Note : Be precise in your answer. In case of numerical problem assume data wherever not provided.****SECTION – A****1. Explain the following:****10 x 2 = 20**

- (a) What is Extinction Ratio?
- (b) What are the advantages of WDM?
- (c) What are the three topologies used for fibre optical network?
- (d) What is OLT?
- (e) What is SONET / SDH?
- (f) Define Crosstalk.
- (g) Give the important features of time-slotted optical TDM network
- (h) What is meant by cross- phase modulation (XPM)?
- (i) What is HDLC?
- (j) What is total number of switches in CLOS Architecture?

SECTION – B**2. Attempt any five of the following questions:****5 x 10 = 50**

- (a) What are large optical switches? Give an account of various architecture used for building optical switches.
- (b) Give a brief account of SONET /SDH layers with diagram.
- (c) Explain the Architecture of OADMS.
- (d) Explain briefly main categories of Nonlinear effects in Optical communication system.
- (e) Explain briefly IP routing and forwarding with help of Diagram and also mention its quality of services.
- (f) What are Bragg Gratings? Explain with Diagram.
- (g) Draw and explain the building blocks of optical network.

SECTION – C**Attempt any two of the following questions:****2 x 15 = 30**

- 3. Write a short note on optical switching technologies. Briefly explain all the approaches with diagram.
- 4. Discuss the various schemes on optical layer protection.
- 5. What are Design Parameters for light Path Topologies in WDM Networks? Calculate design parameter required in determining and minimising network cost in PWDM network.