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.