

(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 131851

Roll No. 1203231044

B.TECH.

Theory Examination (Semester-VIII) 2015-16

OPTICAL NETWORKS

Time : 3 Hours

Max. Marks : 100

Note: Attempt all question. Each question carries equal marks.

Section-A

1. Attempt all questions. (2×10 = 20)

- (a) What is numerical aperture ?
- (b) What is timind recovery ?
- (c) Draw SDH frame structure.
- (d) Write down two difference between isolator and circulator.
- (e) Define orthogonal polarized pulses.
- (f) Write down two advantage of PN photodiode.

- (g) List two features of WDM.
- (h) Give the classification of wavelength routing network design problem.
- (i) Define full wavelength conversion.
- (j) Why SONET/SDH protection has been so successful?

Section-B

2. Attempt any five questions.

[10×5=50]

- (a) Explain layered hierarchy of optical layer.
- (b) Explain various types of nonlinear effect in optical fiber.
- (c) Write short notes on :
 - a. Spectral efficiency
 - b. Cross talk
 - c. Isolator
- (d) Explain the realization of directional coupler using optical fiber and also calculate its coupling efficiency.
- (e) Explain OADM and its architecture.

- (f) List the benefits of SONET/SDH and contrast it with PDH.
- (g) Draw and explain SONET STS-1 frame structure.
- (h) What is a photonic packet switched network? Discuss its salient feature.

Section-C

Attempt any two questions :

(15×2=30)

- 3. Explain the various types of protection mechanism used for point to point link. Write down the difference between self healing rings and unidirectional path switched rings. Explain cost trade off in WDM Network.
- 4. Explain internetworking between layers. Explain the process of wavelength conversion.
- 5. Write short note on:
 - a. OTDM
 - b. Burst Switching
 - c. Light path topology