



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

PAPER ID : 131851

Roll No.

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B. Tech.

(SEM. VIII) THEORY EXAMINATION, 2014-15 OPTICAL NETWORKS

Time : 3 Hours]

[Total Marks : 100

NOTE : ATTEMPT ALL PROBLEMS.

- 1 Answer any FOUR parts of the following : 5×4
 - (a) How signal use to flow in optical fibre
 - (b) Discuss optical packet switching.
 - (c) Discuss optical fibre communication over other communication.
 - (d) What is WDM technique ? Explain with example.
 - (e) Discuss use of optical network use in routers.
 - (f) Discuss the challenges IN optical networks.

- 2 Answer any two parts of the following : 10×2
 - (A) Discuss the operation of tunable laser in detail with its advantages and disadvantages.

- (B) Discuss-
- (1) Wavelength converters
 - (2) Spectral efficiency.
 - (3) Cross Talk
 - (4) Sub carrier modulation
- (C) Discuss various optical switches in detail.
- 3 Answer any two parts of the following- $10 \times 2 = 20$
- (A) Write short note on SONET. How optical layer is protected.
 - (B) What is framing techniques ? Discuss IP routing and forwarding and QOS.
 - (C) Discuss optical amplifiers in detail. Prove that S/N ratio is independent of used modulation techniques.
- 4 Answer any two parts of the following- $10 \times 2 = 20$
- (A) Differentiate-
 - (1) FTTC and FTTH
 - (2) Header and burst swichting
 - (B) Design routing and wavelength assignment problems with some examples in detail.
 - (C) Write short note on network survivability with protection of client layer. Discuss the operation of interworking between layers.

5 Write short notes on any four of the following : $5 \times 4 = 20$

- (1) Buffering
 - (2) Kerr effect
 - (3) PON
 - (4) QOS
 - (5) SDH
 - (6) Access network
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