

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

PAPER ID : MD10

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M. TECH. (Sem.II)
THEORY EXAMINATION 2015-16
COMPUTER COMMUNICATION

Time : **3 Hours**

Total Marks : **100**

Note : 1. Attempt **all** questions.

2. Each question carries **equal** marks.

3. Assume data wherever missing.

1. Attempt any four of the following : (4×5=20)

- (a) Explain Frame format for 802.3 MAC sub layer protocol in detail.
- (b) Explain the responsibilities of data link layer.
- (c) Classify Computer Networks based on geographical distance.
- (d) Distinguish between protocol and service.
- (e) Compare Infrared and spread spectrum LANs
- (f) Describe various ATM adaptation layers and their need.

2. Attempt any four of the following : (4×5=20)
- (a) In a CSMA/CD network at 1Gbps over 1Km without repeaters. Find the minimum frame size. Assume the signal speed in the cable as $200\text{m}/\mu\text{sec}$.
 - (b) Compare frame relay and X.25 network's.
 - (c) State the classification of routing algorithm.
 - (d) Define framing and also specify the need for framing.
 - (e) What is unicast routing? Explain Adaptive routing.
 - (f) A TCP connection has 65535 bytes window sent over 1Gbps channel. The channel has a round trip delay of 20m-secs. Find the maximum achievable throughput and line efficiency.
3. Attempt any two of the following : (2×10=20)
- (a) Explain in detail communication between layers at interface in computer networks.
 - (b) What are the general principles of congestion control algorithm? Explain the leaky bucket algorithm.
 - (c) Explain three way hand shake based connection establishment in TCP.
4. Attempt any two of the following : (2×10=20)
- (a) Explain and differentiate between Pure ALOHA and Slotted ALOHA.

- (b) Discuss in detail the design issues related to data link layer.
- (c) What is ARQ? Discuss in detail: (i) Pipelining (ii) Go-back-N protocol

5. Attempt any two of the following : (2×10=20)

- (a) Write short notes on:
 - (i) ATM Networks
 - (ii) Computer network standardization
- (b) Explain in detail concept of sliding window protocols as analyzed in the data link layer.
- (c) Explain the properties of a cryptographic hashing function. Clearly explain how a cryptographic hashing function can be implemented using a block cipher.
