

IT-503

B. E. (Fifth Semester) EXAMINATION, Dec, 2011

(Information Technology Engg. Branch)

COMPUTER NETWORKS

(IT-503)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note: Attempt one question from each Unit. All questions carry equal marks.

Unit-I

1. (a) What is the difference between connection oriented communication and connectionless communication? Explain the types of service. What are service primitives ? **10**
- (b) What are the advantages and disadvantages of having international standards for network protocols ? **10**

Or

2. (a) What is the difference between confirmed service and unconfirmed service ? For each of the following, tell whether it might be a confirmed service and unconfirmed service both or neither : **10**
- (i) Data transmission
- (ii) Connection release
- (iii) Connection establishment
- (b) Explain the following : **10**
- (i) Virtual terminal protocol
- (ii) Negotiation in discussing network protocol

Unit-II

3. (a) Explain the framing methods in data link layer. Which one of these uses code violations to mark frame boundaries ? **10**
- (b) A channel has a bit rate of 4 kbps and propagation delay of 20 m sec. For what range

of frame sizes does stop and wait give an efficiency of at least 50% ? **10**

Or

4. (a) If the bit string 011110111110111110 is subjected to bit stuffing, what is the output of string ? **5**

(b) For $P = 110011$ and $M = 11100011$, find the CRC. **5**

(c) Consider the use of 1000 bit frames on a 1 Mbps satellite channel with 270 ms delay. What is the maximum link utilization for : **10**

(i) Stop and wait flow control.

(ii) Continuous flow control with window size 7.

(iii) Continuous flow control with window size 1277.

Unit-III

5. (a) Compare the capacity allocation schemes for IEEE 8025 token ring and FDDI. What are the relative pros and cons ? **10**

(b) Explain persistent and non-persistent CSMA. **10**

Or

6. (a) Explain CSMA/CD protocol. Also discuss about collision free protocols. **10**

(b) For a token ring, LAN, suppose that the destination station removes the data frame and immediately sends a short acknowledgement frame to the sender, rather than letting the original frame return to sender. How will this affect performance ? **10**

Unit-IV

7. (a) Explain the two classes of routing algorithms : **10**

(i) Adaptive algorithms

(ii) Non-adaptive algorithms

Discuss about multipath routing.

(b) Explain OSI connection oriented network service primitives. **10**

Or

8. (a) Compare virtual circuit and datagram with in a subnet. **10**

(b) What is the difference, if any, between static routing using two equally

weighted alternatives and selective flooding using only the two best paths ?

Justify your answer.

10

Unit-V

9. (a) Explain the issue of addressing, multiplexing and flow control in connection oriented transport protocol mechanisms.

10

(b) Why is UDP needed ? Why can't user program directly access IP?

10

Or

10.(a) Compare TCP and OSI Class 4 transport protocol.

10

(b) Write notes on the configuration of the following Networking devices :

10

(i) Switches

(ii) Bridges

(iii) Hubs

(iv) Gateway