SPRING END SEMESTER EXAMINATION-2014

6th Semester B.Tech / B.Tech Dual

COMPUTER NETWORKS IT-603

(Regular-2011 & Back-2010, 09 Admitted Batch)

Full Marks: 60 **Time: 3 Hours**

Answer any SIX questions including Question No.1 which is compulsory.
The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable and all parts of a question should be answered at one place only.

1. Answer all the questions [2 × 10

a) In a Go-Back-N ARQ, if the window size is 63, what is the range of sequence numbers?

b) Discuss the advantages and disadvantages of Static and dynamic routing table.

c) Distinguish flow control and congestion Control.

d) In TCP, an endpoint remains for 2MSL in the TIME_WAIT State. Explain.

e) Distinguish Transmission and Propagation Delay.

f) In what situations contention based MAC protocols are suitable?

g) What is the use of two dimensional parity in error detection?

h) Find out the Subnet address if the destination address is 198.47.34.31 and subnet mask is 255.255.224.0.

i) Virtual circuit vs datagram network.

j) Why did the Data Link Protocol always put the CRC in a trailer rather than in the header?

2. a) Compare and Contrast Go-Back-N ARQ protocol with Selective-Repeate ARQ protocol w.r.to send and receive window size, timers and acknowledgement. [4

b) Explain Autonomous system and list routing protocols used inside and across Autonomous system. [4

3. a) Explain how CRC is used in detecting Errors for the following polynomial, $g(x)=x^4+x+1$. Consider the information Sequence 1101011011. Find the codeword corresponding to this sequence. [4

b) Discuss the Window Management in TCP transmission policy with a neat diagram. [4

4. a) Consider sending a packet from a source host to a destination host over a fixed route. List and Explain the delay components in the end-to-end delay. Which of these delays are constant and which are variable? [4

b) List the four broad classes of services that a transport protocol can provide. For each of the service classes, indicate if either UDP or TCP (or both) provides such a service. [4

5. a) Explain Addressing and Channel access control mechanism for Ethernet LAN. [4

b) Discuss the various Error Detection mechanisms in detail. [4

6. a) Explain collision avoidance/recovery with p-persitent/ exponential backoff mechanism. [4

b) Consider the delay of pure ALOHA versus slotted ALOHA at low load. Which one is less? Explain your answer. [4

7. Write short notes on any 4 of the followings: [2 × 4

i) RIP vs OSPF

ii) Link State Packet (LSP)

iii) host byte order vs network byte order

iv) Open loop vs Close loop congestion control

v) Error Detection vs Error correction

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