First Semester M.Tech (CNE/IT) Examination - January 2015
(Autonomous Scheme)
Advances in Computer Networks

Time: 3 Hrs   Max. Marks: 100

Note: Answer all the questions.

1. a) Calculate the total time required to transfer a 1000-KB file in the following cases, assuming an RTT of 50MS, a packet size of 1 KB data and an initial 2×RTT of handshaking before data is sent.   **8**
   i) The bandwidth is 1.5 Mbps and data packets can be sent continuously.
   ii) The bandwidth is 1.5 Mbps, but after we finish sending each data packet we must wait one RTT before sending the next.

   b) Distinguish between stop-and-wait and shading window protocol.   **7**

2. a) Find the last address in the block if one of the address is 140.120.84.24/20.   **2**

   b) With a neat diagram, explain the working of virtual circuit network.   **8**

   c) What is meant by source routing? Explain.   **5**

OR

2. d) What is a virtual LAN? What are its advantages?   **8**

   e) Give forwarding tables for switches S1 to S4 in figure 2(e). Each switch should have a default routing entry, chosen to forward packets with unrecognized destination addresses toward OUT. Any specific-destination table entries duplicated by the default entry should then be eliminated.   **7**
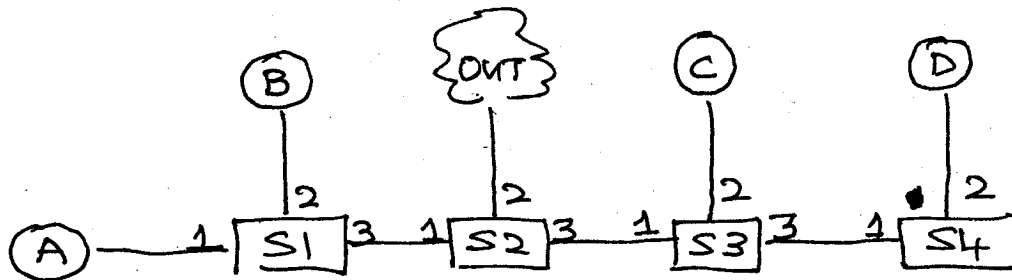

Fig. 2(e)

3. a) Discuss the features of Internet Protocol 6 IPV6   **6**

   b) With an example, explain the working of Open Shortest Path First (OSPF) routing.   **9**

4. a) If the destination IP Address was modified while the packets was in transit. What will happen? Justify your answer   6

   b) With a neat state transition TCP diagram explain the interaction between client and server.   9

5. a) Distinguish between policy and mechanism.   5

   b) How additive increase / multiplicative decrease is used in TCP congestion window.   5

   c) How slow start is used to increase the congestion window.   5

OR

5. d) Distinguish between FIFO and Fair Queuing.   8

   e) How fast retransmit of packets possible with duplicate Acks.   7

6. a) How DEC bit is used in congestion avoidance mechanism.   8

   b) Explain how SMTP protocol focuses mail delivery system across heterogeneous networks.   7

7. a) What is meant by concurrent logical channels?   2

   b) What is the advantage of virtual private network?   2

   c) What do you mean by two-crossing problem?   2

   d) List any two mechanism used to improve TCP performance.   2

   e) What is meant by fast recovery in TCP?   2

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