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T.E. (Computer) (Semester – II) Examination, 2010
COMPUTER NETWORKS
(2003 Course)

Time : 3 Hours Max. Marks : 100

Instructions : *1) Answer **any three** questions from **each** Section.*

*2) Answer to the **two** Sections should be written in **separate** books.*

*3) **Neat** diagram must be drawn **whenever** necessary.*

*4) Black figures to the **right** indicates **full** marks.*

SECTION – I

1. a) What is the difference between a protocol and a service interface ? **8**

   b) Explain CRC error detection mechanisms with an example. **8**

OR

2. a) Explain in details the data transmission in OSI reference model. **8**

   b) What are the advantages and limitation of using frame relay over X.25 for communication ? What are the various steps in congestion control handling in frame relay network ? **8**

3. a) Go back N and selective repeat are two approaches to deal with transmission error. With the aid of a packet sequence diagram show the operation of go back n when a data packet ACK/NAK packet is corrupted. **8**

   b) What is framing ? Why framing is necessary ? Explain different framing technique used in data link layer. **8**

OR

4. a) Explain HDLC in details. **8**

   b) Explain with the help of phase diagram. Working of ppp. List all the activities carried out during each phase. **8**

P.T.O.

5. a) Explain CSMA/CD protocol with binary exponential back off algorithm used in internet. 9

   b) Let G = 0.5 [frames/slot] be the total rate at which frames are transmitted in a slotted ALOHA system. What proportion of slots will be collision free ? What proportion of slots will be collision free when the system is operating at its maximum throughput ? 9

OR

6. a) Discuss the connection management followed in Bluetooth technology. 9

   b) Describe the collision avoidance mechanism used in 802.11 wireless LAN. How this mechanism solves the hidden terminal problem ? 9

SECTION – II

7. a) What is count to infinity problem ? How it can be solved using split horizon algorithm ? What are its limitations ? 8

   b) Explain different types of headers supported by IPV6. 8

OR

8. a) Explain the function of Network layer in ATM network. 8

   b) Explain routing table and routing module. 8

9. a) Explain the steps involved in computing check sum for an UDP datagram. 8

   b) Explain four way handshaking method to terminate a connection in TCP. 8

OR

10. a) What is QOS in internet working ? What are the technique to improve QOS ? 8

    b) What is silly window syndrome problem ? Suggest two solution to recover this problem. 8

11. a) How does DNS perform name resolution ? Mention the DNS message format for query and reply messages ? 9

    b) What are the three main components of internet mail system ? Explain briefly three SMTP command issued by client. 9

OR

12. a) Explain Virtual private network. What are the applications ? 9

    b) Explain FTP and TFTP ? 9