Roll No. .....

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BT-5/D09

COMPUTER NETWORKS

Paper : CSE-303

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *five* questions, taking at least *one* question from each unit.

UNIT–I

1. (a) Explain the principal difference between Connection-oriented and Connection-less communication. (3)

   (b) Explain the reasons for using Layered protocols. (4)

   (c) List the ways in which OSI and TCP/IP reference models are same and the ways in which they differ. (5)

   (d) Write a short note on Sockets. (3)

2. (a) Calculate the maximum data rate for a noiseless 3 kHz channel for a binary signal. (6)

   (b) Given message (M) = 101101001and generator polynomial (G) = 1101. Generate CRC bits. (6)

   (c) Write a short note on BISDN. (3)

UNIT–II

3. (a) Explain the difference between the following :

   (i) Static and Dynamic channel allocation.

   (ii) Pure ALOHA and Slotted ALOHA.

   (iii) Persistent and Non-persistent CSMA. 6

(b) Write short notes on the following :

(i) HDLC.

(ii) CDMA.

(iii) Statistical Multiplexing. (9)

4. (a) Explain the working of 3-bit sliding window protocol with the help of suitable example. (5)

(b) Differentiate between the following :

(i) Broadcasting and Multicasting.

(ii) Network Architecture and Protocol Stack.

(iii) GO-Back-N-ARQ and Selective-Reject-ARQ.

(iv) IEEE 802.4 and IEEE 802.5. (10)

UNIT–III

5. (a) Differentiate between the following :

(i) Circuit switching and Packet switching.

(ii) Datagrams and Virtual circuits.

(iii) Bridge and Router.

(iv) Distance vector and Link state routing. (8)

(b) Write a short note on X.25. (7)

6. (a) What are ATM Networks ? Discuss its reference model and features. (8)

(b) Write short note on Congestion control techniques. (7)

UNIT–IV

7. (a) What are the various goals of IPv6 ? What is the purpose of Extension headers in IPv6? (8)

(b) Show the layout of TCP segment and explain it. (7)

8. (a) Explain the significance of following IP addresses :

(i) 128.211.0.0

(ii) 127.0.0.1

(iii) 255.255.255.255 (5)

(b) Write short notes on the following :

(i) ICMP Packets.

(ii) DHCP.

(iii) Subnetting.

(iv) Mobile IP. (10)
