53 (EC 604) CMNW

2018

COMMUNICATION NETWORK

Paper : EC 604

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

1. *(a)* Describe remote log-in using TFLNET. 10

   (b) Explain different close-loop congestion control techniques. 10

2. *(a)* The following character encoding is used in a data link protocol : 6

A : 01000111 ; B : 11100011 ;
FLAG : 01111110 ; ESC : 11100000
Show the bit sequence transmitted (in binary) for the four-character frame ABFSC FLAG when each of the following framing methods is used : (a) byte count, (b) Flag bytes with byte stuffing (c) starting and ending flag bytes with bit stuffing.

(b) Discuss about the vulnerable time and throughput of Pure ALOHA system. What is slot time ? 5+2=7

(c) Describe the architecture of ATM networks. What is an ATM cell ? 5+2=7

3. *(a)* Discuss the IPv4 datagram header format. 7

(b) An IPv4 datagram is carrying 1024 bytes of data. With no option information, what is the value of the header length field ? What is the value of the total lenght field ? 3

(c) What is resolution used in DNS ? Discuss about the *two* types of DNS resolutions. 2+8=10

4. (a) Describe an electronic-mail scheme. 8

(b) Describe the architecture of World Wide Web (WWW). Write the importance of HTTP. 5+3=8

(c) Draw the inverse domain of the following IP address : 4

132.34.45.121

5. (a) Discuss the kind of time-division multiplexing used in ATM networks. Write about the different ATM layers. 5+5=10

(b) Find the first address, last address and the block size of the following address block : 6

200.17.21.128/27

(c) Draw the TCP/IP reference model, showing various protocols of the respective layers. 4

6. *(a)* Discuss and differentiate between : 4×4=16

(i) circuit switching and packet switching

(ii) hub and switch

(iii) MAC address and IP address and

(iv) TCP and IP

(b) Explain multiple access and carrier sending. 4

7. *(a)* Describe connection establishment by TCP using three-way handshaking. 6

(b) Write brief notes on FDDI and DQDB. 4+4=8

(c) Write about HTML and URL related to WWW. 3

(d) A host is sending 100 datagrams to another host. If the identification of the first datagram is 1024, what is the identification no. of the last (in IPv4) ? 3
