53 (EC 604) CMNT

2014

COMMUNICATION NETWORKS

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)* Define fragmentation and why IP needs to fragment some packets ? What is reassembly ? 6+2=8

   (b) The size of the option field of IPv4 datagram is 20 *bytes*. What is the value of HLEN ? What is the value in binary ? 5

   (c) Explain the header format of IPv4 datagram with a neat diagram. 7

2. *(a)* A host is sending 100 datagram to another host. If the identification number of the first datagram is 1024, what is the identification number of the last datagram ? 3

(b) Define the terms : 3+3=6

(i) MTU and

(ii) Time-to-live field.

(c) Discuss various congestion control techniques. 11

3. *(a)* Explain the connection set-up phase of TCP with three-way handshaking. 6

(b) Explain the working of electronic mail (e-mail) process. 7

(c) Discuss various web documents. 7

4. *(a)* Write brief notes on : 5+5=10

(i) FDDI and

(ii) DQDB.

(b) Differentiate between Circuit Switching and Packet Switching. 6

(c) Write the salient features of UDP. 4

5. *(a)* What is a DNS ? Discuss Recursive and Iterative Resolution. 9

(b) How does caching increase the efficiency of name resolution ? 3

(c) What are the important features of ATM networks ? Mention the different functions of ATM layers. 4+4=8

6. *(a)* Explain the Selective Repeat ARQ. 6

(b) Draw the TCP/IP model showing the protocols of respective layers. 5

(c) What are the responsibilities of physical layer ? Explain the use of optical fibre as a transmission medium in computer networks. 5+4=9

7. Write short notes on : 5×4=20

(i) Cryptography

(ii) Telnet

(iii) FTP

(iv) HTTP.
