53 (EC 604) CMNW

2019

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)* Explain with neat diagram, connection establishment in TCP using three-way handshaking. What is SYN flooding attack? 8+2=10

   (b) Describe the Error Reporting process of ICMP. 10

2. *(a)* Find the first address, last address and size of the following block :
   200.17.21.128/27
   6

(b) Draw a neat diagram of TCP/IP protocol stack, showing protocols of each layer. Also, draw a diagram of OSI Reference model. 5

(c) Describe Internet as a connectionless datagram switching network. 5

(d) An IPv4 fragment has arrived with an offset value of 100. How many bytes of data are originally sent by the source before the data in this fragment? 4

3. (a) Describe the architecture of ATM networks. Explain its various layers. 5+6=11

(b) Describe World Wide Web (WWW) as a client/server architecture. Discuss HTML and HTTP in this context. 3+3+3=9

4. (a) Describe a general architecture of Electronic Mail. What is SMTP? 7+3=10

(b) The size of the option field of an IPv4 datagram is 20 bytes. What is the value of HLEN? 2

(c) Which fields of the IPv4 header change from router to router and why? 3

(d) Write down the responsibilities of data link layer. 5

5. (a) Why do we need a DNS system when we can directly use an IP address? 2

(b) Discuss different domain namespaces. 7

(c) What is resolution and resolver? Differentiate between recursive resolution and iterative resolution. 3+8=11

6. Differentiate between : 5×4=20

(i) Hub, Switch and Repeater

(ii) Packet switching and Circuit switching

(iii) Pure ALOHA and Slotted ALOHA

(iv) TCP and IP.

Contd.

7. Write short notes on : 5×4=20

(i) TELNET

(ii) FDDI

(iii) Token Ring Network

(iv) IPv6.