Total No. of printed pages = 7

END SEMESTER EXAMINATION – 2019

Semester : 5th (New)

Subject Code : CO-502

COMPUTER COMMUNICATION AND NETWORKING

Full Marks – 70

Time – Three hours

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

Instructions :

1. Questions on PART – A are compulsory.
2. Answer any *five* questions from PART – B.

PART – A

Marks – 25

1. Fill in the blanks : 10×1=10

   (a) Router operates in ——— layer.

   (b) The ——— protocol is used to transfer, access and manage files.

   (c) Standard Ethernet uses ——— encoding.

[Turn over

(d) The minimum frame size in 802.3 LAN is ———.

(e) In data communication, ATM is acronym for ———.

(f) HTTP operates at port ———.

(g) ——— transmission allows receiving and transmitting data simultaneously.

(h) UDP is a ——— layer protocol.

(i) Default Subnet mask for class B network is ———.

(j) IP is an unreliable, best effort ——— protocol.

2. State true or false : 10×1=10

(a) IPv6 uses 16 bit addresses.

(b) Asynchronous transmission is known as start/stop transmission.

(c) TCP header can vary from 20 bytes to 60 bytes.

(d) UDP is a reliable protocol.

(e) A Hub is a broadcasting device.

(f) A ring topology network uses half duplex communication.

(g) 192.168.256.100 is a class C IP address.

(h) HTTP operates in transport layer.

(i) MAC address on a network is the computer's unique hardware number.

(j) ARP is used to find out MAC address of corresponding IP address.

3. Select the correct answer : 5×1=5

(a) The ——— sub layer is responsible for the operation of the CSMA/CD access method and framing.

(i) LLC

(ii) MII

(iii) MAC

(iv) None of the above.

(b) The range of first octet of class B IP address is

(i) 0 to 127

(ii) 192 to 223

(iii) 224 to 239

(iv) 128-191

(c) The highest data rate is provided by the transmission medium

(i) Coaxial cable

(ii) Optical fiber

(iii) Microwave

(iv) Twisted pair

(d) The layer responsible for end to end (process to process) delivery of the entire message is

(i) Network layer

(ii) Transport layer

(iii) Session layer

(iv) Data link layer

(e) What is the potential IPv4 address available ?

(i) 4, 294, 967, 296

(ii) 65, 536

(iii) 16, 777, 216

(iv) Limitless.

PART – B

Marks – 45

Answer any *three* questions from (4–7).

4. (a) Explain the concept of network with its advantages. 3

(b) Why multiplexing is used ? Explain the various multiplexing techniques. 4

(c) What do you mean by Transmission media ? Classify them. 5

5. (a) Explain the working of CSMA/CD protocol. 3

(b) Write the working principle of Hamming code. 4

(c) Explain the various switching techniques used in computer network. 5

6. (a) Explain briefly the IP address (both classfull and classless). 3

(b) Why TCP is called a reliable protocol? Justify. 4

(c) Draw and explain the Frame structure of Ethernet (IEEE 802.3, MAC frame format). 5

7. (a) Explain the main functions of presentation layer in the ISO reference model. 3

(b) Define the terms DNS, MIME, SMTP and ARP. 4

(c) Draw and explain the IP header format. 5

Answer any *one* question from (8 – 9).

8. (a) Explain encryption and decryption with example. 2

(b) Differentiate between a Switch and a Hub. 2

9. (a) How Subnet mask is useful? Also define Supernetting. 2

(b) Explain the term ISDN. 2

Answer any *one* question from (10 – 12).

10. Draw and explain the OSI reference model and compare it with TCP/IP model. 5

11. Explain any one of the routing algorithm. 5

12. Write the working principle of sliding window protocol. 5