

Professional Course Examination, May 2023

(4th Semester)

BACHELOR OF COMPUTER APPLICATIONS

(Computer Networking—I)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(PART : A—OBJECTIVE)

(Marks : 25)

SECTION—I

(Marks : 15)

A. Tick (✓) the correct answer in the brackets provided : 1×10=10

1. Token ring is a data link technology for

- (a) WAN ()
- (b) MAN ()
- (c) LAN ()
- (d) Both (a) and (b) ()

2. TELNET uses _____ for data connection.

(a) TCP ()

(b) UDP ()

(c) IP ()

(d) DHCP ()

3. What is the full form of URL?

(a) Uniform Routing Locator ()

(b) Uniform Resource Locator ()

(c) Universal Resource Locator ()

(d) Uniform Router Locator ()

4. ARP works on Ethernet networks.

(a) True ()

(b) False ()

5. NAT stands for

(a) Network Address Transformer ()

(b) Network Address Translator ()

(c) Network Address Translation ()

(d) Both (b) and (c) ()

6. Which of the following is/are secure VPN protocol(s)?

(a) UDP ()

(b) TCP ()

(c) SSTP ()

(d) Both (b) and (c) ()

7. _____ is/are added to data packet for error detection.
- (a) Checksum bit ()
 - (b) Error bit ()
 - (c) Parity bit ()
 - (d) Both (a) and (c) ()
8. All IP addresses are divided into network address and host address.
- (a) True ()
 - (b) False ()
9. Why was the OSI model developed?
- (a) Manufacturers disliked the TCP/IP protocol suite ()
 - (b) The rate of data transfer was increasing exponentially ()
 - (c) Standards were needed to allow any two systems to communicate ()
 - (d) None of the above ()
10. Data link layer is responsible for
- (a) node-to-node delivery ()
 - (b) host-to-host delivery ()
 - (c) process-to-process delivery ()
 - (d) None of the above ()

B. State whether the following statements are *True* or *False* : 1×5=5

1. The well-known port number of FTP is 21. (T / F)
2. The services offered by TCP include full-duplex communication. (T / F)
3. RTP is a protocol designed to handle real-time traffic on the Internet. (T / F)

4. FTP is included as a protocol in the transport layer. (T / F)

5. The frequency range of microwaves is 1 GHz to over 300 GHz. (T / F)

SECTION—II

(Marks : 10)

C. Answer the following questions : 2×5=10

1. (a) What is the main function of repeaters in computer networking?

OR

(b) Write the differences between star topology and mesh topology.

2. (a) Write any two characteristics of transmission media.

OR

(b) What do you understand by Bluetooth?

3. (a) What protocols are used in data link layer?

OR

(b) Explain SDLC (Synchronous Data Link Control).

4. (a) What is ICMP (Internet Control Message Protocol) used for?

OR

(b) Write a short note on IPv4.

5. (a) Explain any one protocol of application layer.

OR

(b) What is subnetting?

(PART : B—DESCRIPTIVE)

(Marks : 50)

D. Answer the following questions :

10×5=50

1. (a) Write and explain the difference between OSI and TCP/IP model. 5
- (b) Write and explain the advantages of a computer networking. 5

OR

2. (a) Write the functions of transport layer. 5
- (b) Explain the client/server method of connecting computers. 5
3. (a) Write the differences between guided and unguided media with examples. 6
- (b) How is digital signal different from analog signal? 4

OR

4. (a) Explain the working of FDM (Frequency Division Multiplexing). 5
- (b) Describe PPP framing in computer networking. 5
5. (a) Explain error detection mechanism of data transmission. 6
- (b) Explain the characteristics of stop-and-wait ARQ. 4

OR

6. (a) Describe different ways to handle error correction. 6
- (b) Write the functions of data link layer. 4
7. (a) Describe NAT. Write the advantages and disadvantages of NAT. 6
- (b) Write a short note on IPv6. 4

OR

8. (a) What is user datagram protocol (UDP)? Write the benefits and downsides of UDP. 5
- (b) Write the functions of transport layer. 5

9. (a) What is the function of e-mail? Describe the basic components of an e-mail system. 5
 (b) Define WWW. Describe the architecture of WWW. 5

OR

10. (a) What is HTTP? Write the advantages of HTTP. 6
 (b) Differentiate between standard and fast Ethernet. 4

2. (a) Write the functions of transport layer. 5
 (b) Explain the client-server method of connecting computers. 5
3. (a) Write the difference between guided and unguided media with examples. 6
 (b) How is digital signal different from analog signals? 4

OR

4. (a) Explain the working of FDM (Frequency Division Multiplexing). 5
 (b) Describe PPP framing in computer networking. 3
5. (a) Explain error detection mechanism of data transmission. 6
 (b) Explain the characteristics of stop-and-wait ARQ. 4

OR

6. (a) Describe different ways to handle error correction. 6
 (b) Write the functions of data link layer. 4
7. (a) Describe NAT. Write the advantages and disadvantages of NAT. 6
 (b) Write a short note on IPv6. 4

OR

8. (a) What is user datagram protocol (UDP)? Write the benefits and disadvantages of UDP. 5
 (b) Write the functions of transport layer. 5