Student's Copy

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

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