

Professional Course (Even) Examination, 2025

(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)

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

1. Which of the following topology arrangements is a point-to-point line configuration?

- (a) Ring ()
- (b) Mesh ()
- (c) Star ()
- (d) All of the above ()

2. Which of the following is **not** a primary cause of transmission impairment?
- (a) Attenuation ()
 - (b) Distortion ()
 - (c) Noise ()
 - (d) Amplification ()
3. Which of the following electromagnetic waves comes in unguided media?
- (a) Radio wave ()
 - (b) Microwave ()
 - (c) Infrared wave ()
 - (d) All of the above ()
4. In _____ the frequency of the carrier signal is varied based on the information in a digital signal.
- (a) ASK ()
 - (b) PSK ()
 - (c) FSK ()
 - (d) QAM ()

5. One of the benefits of encasing a twisted-pair is the

(a) reduction of crosstalk ()

(b) reduction of noise ()

(c) increase in flexibility ()

(d) decrease in costs ()

6. Why are parity bits used?

(a) To encrypt data ()

(b) To detect error ()

(c) To identify user ()

(d) All of the above ()

7. Which of the following is false with respect to UDP?

(a) Connection-oriented ()

(b) Unreliable ()

(c) Transport layer protocol ()

(d) Low overhead ()

8. Four bits are used for packet sequence number in sliding window protocol, what is the maximum window size?

(a) 4 ()

(b) 8 ()

(c) 15 ()

(d) 16 ()

9. What is the default port number of HTTP?

(a) 80 ()

(b) 40 ()

(c) 60 ()

(d) 100 ()

10. TELNET is a/an _____ based computer protocol.

(a) sound ()

(b) text ()

(c) animation ()

(d) image ()

II. Indicate whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark in the brackets provided : 1×5=5

1. Data communication system spanning states, countries, or the whole world is WAN.

(T / F)

2. FSK is also called as ON-OFF keying.

(T / F)

3. PPP is transport layer protocol.

(T / F)

4. Same topology is used by all the nodes to construct a routing table in dynamic routing.

(T / F)

5. TELNET is used for remote login.

(T / F)

SECTION—II

(Marks : 10)

III. Answer the following questions in short :

2×5=10

1. (a) What is the main function of Wi-Fi-routers?

OR

- (b) What are the different types of topologies?

2. (a) Differentiate between FDM and WDM.

OR

- (b) What is multiplexing?

3. (a) Why do you need error detection and correction?

OR

- (b) Why do flow and error control required in the network?

4. (a) Briefly explain the working of link state routing.

OR

- (b) What is network address translation?

5. (a) Write a note on e-mail.

OR

- (b) What is DNS?

(PART : B—DESCRIPTIVE)

(Marks : 50)

IV. Answer the following questions : 10×5=50

1. (a) What is networking? What are the advantages and disadvantages of networking? 6
- (b) Explain the following terms : 4
Gateway and Router

OR

- (c) Explain a function of each layer of an OSI reference model. Mention two differences of OSI and TCP/IP reference model. 8+2=10
2. (a) Explain circuit switching with appropriate diagram. 5
- (b) Explain datagram network. 5

OR

- (c) What are guided and unguided media? Give an example of each. Explain any two guided media in detail. 4+6=10
3. (a) Explain Hamming codes with appropriate example. 5
- (b) Explain the framing of PPP. 5

OR

- (c) Explain the following ARQ with examples : 10
(i) Stop and wait ARQ
(ii) Go-Back-N ARQ
(iii) Selective repeat ARQ
4. (a) What are the features of TCP? 5
- (b) What is routing? What is the working principle of link state routing? 5

OR

- (c) Explain ICMP and IPv4. 5+5=10

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| 5. (a) What are standard, fast and gigabit ethernet? | 6 |
| (b) Explain the working principle of WWW. | 4 |

OR

- | | |
|--|---|
| (c) Explain Bluetooth and its architectures. | 5 |
| (d) What is subnet? Explain subnetting in brief. | 5 |
