Roll No. .....

97679

BCA 3 Years 5th Semester (Old Scheme) Examination – December, 2025

DATA COMMUNICATION AND NETWORKING

Paper : BCA-303

Time : Three Hours] *[Maximum Marks : 80*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt ***five*** questions in all, selecting ***one*** question from each Unit. Question No. 1 is ***compulsory***. All questions carry equal marks.

1. (a) What is DSL Service ? $8 \times 2 = 16$

(b) What is Baud Rate ?

(c) What is X.25 ?

(d) What is ATM ?

(e) What is Security threat ?

(f) What is Ethernet ?

(g) What is FDDI ?

(h) What is Dialup Networking ?

UNIT – I

2. What do you understand by Computer Communications and networking technologies ? Explain their significance in data exchange, communication protocols used today. 16

3. What are the primary uses of Computer Networks ? Explain the roles of network devices, nodes, and hosts. Also, discuss the different types of computer networks along with their topologies, using suitable diagrams or examples. 16

UNIT – II

4. What are Communication Satellites and how do they aid in data transmission ? Explain the concepts of switching and multiplexing in networking, their types and significance in efficient communication. 16

5. What are Digital Carrier Systems in Data Communication ? Explain guided and wireless transmission media, explaining their characteristics, advantages, and examples of where each is used. 16

UNIT – III

6. What is the role of the Data Link Layer in the OSI model ? Explain the concepts of framing, flow control, and error control. Discuss various error detection and correction techniques used in the Data Link Layer with suitable examples. 16

7. (a) What are Sliding Window Protocols in data communication ? Explain how they work and their role in flow control. 10

(b) What is the concept of Media Access Control (MAC) ? Explain with example. 6

UNIT – IV

8. What are the key routing strategies in computer networks ? Explain the concepts of flooding, shortest path routing, distance vector routing, and link state routing. 16

9. What is Hierarchical Routing, and how does it improve scalability in large networks ? Explain the concept of Congestion Control algorithms in networking and their role in managing network traffic. 16