

Roll No.

97679

BCA 5th Semester
Examination – December, 2022

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. Question number 1 is compulsory. In addition to compulsory question, attempt four more questions selecting one question from each Unit.

1. Compulsory Question :

- Differentiate between topology and protocol.
- State the purpose of layering in network.
- How data can be represented as analog signal ?
- List out various modulation techniques.
- Differentiate between Fast Ethernet and Gigabit Ethernet.

- What is the use of NIC in network ?
- What is Flooding ?
- Discuss various security threats.

UNIT – I

2/ Differentiate OSI and TCP/IP model. Discuss various types of addresses associated with the layers of TCP/IP model.

3. Differentiate between centralized and distributed systems. How communication is performed in these two models ?

UNIT – II

- Explain various data encoding techniques in brief.
 - Compare multilevel, multiple-slot and pulse-stuffed TDMs.
- 5/ (a) What is Modulation ? Explain various techniques of modulation.
- (b) What is Switching ? How packet switching is different from message switching ? Explain.

UNIT – III

- Compare error detection and error correction. Explain various error detection methods with the help of suitable example.
- Explain the concepts of Token ring and FDDI in brief.

7. (a) Explain the mechanism of sliding window control. Discuss link utilization for this mechanism also.
- (b) Explain various network hardware components with their usage.

UNIT – IV

8. (a) Differentiate between Link state and Distance vector routing algorithm. How flooding can be minimized ?
- (b) What is Congestion ? Discuss the policies related to congestion and ways of congestion control.
9. (a) Differentiate between Virtual circuit and Datagram.
- (b) What is Encryption ? Discuss Public-key algorithms for network security.
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