

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 :**

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

97679-4,250-(P-3)(Q-9)(22)

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- (f) What is the use of NIC in network ?
- (g) What is Flooding ?
- (h) 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**

- 4. (a) Explain various data encoding techniques in brief.
- (b) 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**

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

97679-4,250-(P-3)(Q-9)(22) ( 2 )

- 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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97679-4,250-(P-3)(Q-9)(22) ( 3 )