

# END TERM EXAMINATION

THIRD SEMESTER [BCA] DECEMBER 2024

Paper Code: BCA-201

Subject: Computer Networks

Time: 3 Hours

Maximum Marks: 60

Note: Attempt five questions in all including Q. No.1 which is compulsory. Select one question from each unit.

Q1 Answer the following:-

- (a) Explain the concept of distributed processing. How does it enhance the performance of network systems? (4)
- (b) Define attenuation, distortion, and noise in transmission. How do they affect signal quality? (4)
- (c) Describe the significance of modulation in telecommunication. (4)
- (d) Explain the mechanisms involved in flow control in data communication. (4)
- (e) Describe the process of IPv4 subnetting and its importance in network configurations. (4)

## UNIT-I

Q2 Explain the essential components of a data communication system and their roles in facilitating communication. Use diagrams where necessary? (10)

OR

Q3 Explain the differences between guided and unguided transmission media. Discuss the factors affecting propagation speed and throughput in these media types. (10)

## UNIT-II

Q4 Discuss various error detection and correction methods employed in the data link layer. Compare their effectiveness and implementation complexities. (10)

OR

Q5 Compare the OSI and TCP/IP models in terms of their layer structures and the protocols associated with each layer. (10)

## UNIT-III

- Q6 (a) Differentiate between WDM, TDM, and FDM in multiplexing techniques. Provide real-world applications for each. (5)
- (b) Explain the principles of unicast routing protocols: RIP, OSPF, and BGP. (5)

OR

Q7 Discuss the differences between static and dynamic routing. Explain Distance Vector and Link State routing protocols. (10)

## UNIT-IV

- Q8 (a) Compare IPv4 and IPv6 addressing schemes, highlighting their advantages and differences. (5)
- (b) Define the roles of the session layer, presentation layer, and application layer in the OSI model. (5)

OR

Q9 Discuss symmetric and asymmetric encryption techniques, highlighting their differences in terms of security, key distribution, and computational complexity. (10)

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