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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