

Exam.Code:0935
Sub. Code: 33766

2125
B.E. (Electrical and Electronics Engineering)
Fifth Semester
PC-EE-505: Computer Networks

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

- a) Differentiate between physical, logical, and port addressing.
- b) Define protocol and explain its significance in computer networks.
- c) What is CSMA/CD? How does it prevent collisions?
- d) Explain the difference between IPv4 and IPv6 addressing schemes.
- e) What are congestion control mechanisms in the Network layer? (5x2)

UNIT - I

II. Discuss the functions and services of each layer in the OSI Reference Model and compare them with those of the TCP/IP Model. (10)

III. a) Explain circuit switching, packet switching, and virtual circuit switching with suitable diagrams.

b) Describe the major transmission impairments in data communication systems. (2x5)

IV. a) Explain the framing and error detection techniques used in the Data Link Layer.

b) Describe the IEEE 802.11 (Wi-Fi) standard and compare it with Ethernet (802.3). (2x5)

UNIT - II

V. a) Discuss the distance vector and link state routing algorithms, highlighting their differences.

b) Explain the role of ARP, NAT, and ICMP in IP networking. (2x5)

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(2)

- VI. Describe the functions of TCP and UDP protocols. Compare their features in terms of reliability, connection type, and use cases. (10)
- VII. a) Explain the Domain Name System (DNS) architecture and working mechanism.
b) Write short notes on any two of the following:
- i) SMTP and FTP
 - ii) HTTP and WWW
 - iii) Network Security and Cryptography (2x5)

x-x-x