

**Unit I****Chapter 1 : Introduction to Computer Networks****1-1 to 1-37**

Syllabus : Definition, **Types of Networks** : Local Area Networks (LAN), Metropolitan Area Networks (MAN), Wide Area Networks (WAN), Wireless networks, Networks software, Protocol, Design issues for the network layers.
Network Models : The OSI reference model, TCP/IP model, Network topologies, Types of transmission medium.
Network Architectures : Client-Server, Peer to Peer, Hybrid.

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Unit I

Chapter 2 : Network Devices & Line Coding 2-1 to 2-14

Syllabus : Network Devices : Bridge, Switch, Router, Gateway, Access point. **Line Coding Schemes :** Manchester and Differential Manchester encodings, Frequency Hopping (FHSS) and Direct Sequence Spread Spectrum (DSSS).

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Unit II

Chapter 3 : Data Link Layer

3-1 to 3-36

Syllabus : Introduction, Functions. **Design issues :** Services to network layer, Framing. **ARQ strategies :** Error detection and correction, Parity bits, Hamming codes (11/12-bits) and CRC, **Flow control protocols :** Unrestricted simplex, Stop and wait, Sliding window protocol, **WAN connectivity :** PPP and HDLC.

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Syllabus : MAC sub layer : Multiple access protocols : Pure and slotted ALOHA, CSMA, WDMA, CSMA/CD, CSMA/CA, Binary exponential Back-off algorithm, **Introduction to Ethernet : IEEE 802.3, IEEE 802.11 a/b/g/n and IEEE 802.15 and IEEE 802.16 standards.**

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Unit IV

Chapter 7 : Transport Layer 7-1 to 7-53

Syllabus : Process to Process Delivery, Services, Socket Programming. **Elements of Transport Layer Protocols** : Addressing, Connection establishment, Connection release, Flow control and buffering, Multiplexing, Congestion Control. **Transport Layer Protocols** : TCP and UDP, SCTP, RTP, Congestion control and Quality of Service (QoS), Differentiated services, TCP and UDP for Wireless networks.

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