**Computer Networks**

**UNIT-I** Introduction to computer Networks, direction of data flow (simplex,Half duplex, full duplex); Networks: distributed processing, network criteria, physical structure (type of connection, topology), categories of network (LAN, MAN, WAN); Internet: brief history, internet today; Protocols and standards; Reference models: OSI reference model, TCP/IP reference model, their comparative study.

**UNIT-II** Physical Layer: Types of errors, framing (character and bit stuffing), error detection & correction methods; Flow control; Protocols: Stop & wait ARQ, Go-Back- N ARQ, Selective repeat ARQ, HDLC;

**UNIT-III** Point to point protocol, LCP, NCP, FDDI, token bus, token ring; Reservation, polling, concentration; Multiple access protocols: Pure ALOHA, Slotted ALOHA, CSMA, CSMA/CD, FDMA, TDMA, CDMA; Traditional Ethernet, fastEthernet;

**UNIT-IV** Routing : techniques, static vs. dynamic routing , routing table for classful address;Routing algorithms: shortest path algorithm, flooding, distance vector routing, link state routing, Mobile routing basic algorithms.

**UNIT-V** Protocols: ARP,RARP, IP, ICMP, IPV6; Unicast and multicast routing protocols. Congestion control algorithm: Leaky bucket algorithm, Token bucket algorithm, choke packets. Congestion control protocols.

**UNIT-VI** Process to process delivery; UDP; TCP; Quality of service: techniques to improve Qos.ISDN services &ATM; DSL technology, Cable modem, Sonet.Wireless LAN: IEEE 802.11; Introduction to blue-tooth, VLAN’s, Cellular telephony & Satellite network.

**Text Books:** 1. B. A. Forouzan – “Data Communications and Networking (3rd Ed.) “ – TMH 2. A. S. Tanenbaum – “Computer Networks (4th Ed.)” – Pearson Education/PHI 3. W. Stallings – “Data and Computer Communications (8th Ed.)” – PHI/ Pearson Education

**Reference Books:** 1. Kurose and Rose – “Computer Networking -A top down approach featuring the internet” – Pearson Education 2. Introduction to Data Communications and Networking by Wayne Tomasi-Pearson Edition 3. Comer – “Internetworking with TCP/IP, vol. 1, 2, 3(4th Ed.)” – Pearson Education/PHI