

COMPUTER NETWORKS

UNIT-I:

Network Hardware reference model: Transmission media, Narrowband ISDN, Broad band ISDN, ATM.

The data Link layer: Design Issues, Error detection and correction, Elementary Data Link Protocols, Sliding window protocols : Data link layer in HDLC, Internet and ATM.

UNIT-II:

Channel allocation methods: TDM, FDM, ALOHA, Carrier sense Multiple access protocols, Collision Free protocols – IEEE standard BO2 for LANS – Ethernet, Token Bus, Token ring, Bridges.

Network layer Routing Algorithms: Shortest path, Flooding, Flow based Distance vector, Link state, Hierarchical, Broadcast routing, Congestion Control algorithms-General principles of congestion control, Congestion prevention polices, Choke packets and Load shedding.

UNIT-III:

Internet Working: Tunneling, internetworking, Fragmentation, network layer in the internet – IP protocols, IP address, Subnets, Internet control protocols, DSPF, BOP, Internet multicasting, Mobile IP. Network layer in the ATM Networks – cell formats, connection setup, routing and switching, service categories, and quality of service, ATM LANs.

UNIT-IV:

The Transport Layer: Elements of transport protocols – addressing, establishing a connection, releasing connection, flow control and buffering and crash recovery, end to end protocols: UDP, reliable Byte Stream (TCP) end to end format, segment format, connection establishment and termination, sliding window revisited, adaptive retransmission, TCP extension, Remote Procedure Call – BLAST, CHAN, SELECT, DCE.

UNIT-V:

Application Layer: Network Security, Cryptographic Algorithms: DES, RSA. Security Mechanisms: Authentication Protocols, Firewalls. Name service (DNS) Domains Hierarchy, Name servers. Traditional Applications: SMTP, MIME, World Wide Web: HTTP, Network Management: SNMP.

TEXTBOOKS:

1. Computer Networks and rew, Tanenbaum, 4/e, Pearson
2. Data and computer communications, stallings, 8/e, PHI

REFERENCEBOOKS

1. Data communications and networking Forouzan, 4/e, TMH
2. Computer Networks – A System Approach, Peterson, Bruce Davie,2/e ,Harcourt Asia
3. Compute communications and networking technologies, Gallo, Hancock, Cengage
4. An Engineering approach to compute networking, Kesha, Pearson
5. Communication networks, 2/e, Leon-Garcia, TMH
6. Computer networks, Anuranjan Misra, ACME Learning