Subject Code : P8BIE5B

NETWORKS AND DISTRIBUTED COMPUTING

UNIT - I

Reference Model, Network Topologies and Protocols, Types of Networks: Local Area Network (LAN), Wide Area Network (WAN), Metropolitan Area Network (MAN), Network Security (Firewall, Packet Filtering, VPN), Uses of Computer Networks

UNIT - II

OSI & Internet Architecture, IEEE 802 standards, Physical Layer - Transmission Media, Switching. Data Link Layer - Design Issues, Example Data Link Protocols, Data Link layer in the Internet, Media Access Sub layer

UNIT - III

Network Layer - Design Issues, Routing Algorithms, Congestion control algorithm, Router Operation, Router Configuration, Internetworking, IP Addressing, IP Subnet Mask, IPv6 (an overview) Transport Layer – Transport Service, TCP/IP Protocols (TCP, UDP)

UNIT - IV

Design Issues, Conventional Encryption, Classical and Modern Techniques, Encryption and Decryption Algorithms (RSA), Confidentiality, DNS, SNMP, RMON, WWW, E-mail, Digital Signatures

UNIT - V

Introduction to Distributed Computing, Examples, Key Characteristics, Historical background, Basic design issues, User requirements - Introduction to IPC, Building Blocks, Client Server Communication, Group Communication, Remote Procedure Call (RPC).

References Books

1. Tananbaum A.S.,(1999) “Computer Networks”, 3rd Ed, PHI
2. Black U.,(1996) “Computer Networks-Protocols, Standards and Interfaces”, PHI, 1996
3. George Coulouris, Jean Dollimore, Tim Kindsberg,(2000) “Distributed Systems : Concepts & Design” 3rd Ed, Addison Wesley