Sub Code : 15IT14401

Sub Name : Data Communication and Computer Networks

Objective :

* To study the fundamental principles architectures and techniques employed in computer
* To study the concepts of communi-cation networks, protocols and their performance.
* To design basic network system

Unit - I Introduction to computer Networks

Intro to computer networks - Reference models - ISO Open System Integration (OSI) model - TCP/IP protocol suit - Evaluation of Internet - Brief History, Internet today

Unit - II Physical Layer

Transmission media - Guided and Unguided media, Twisted pair cable (STP and UTP), Co-axial cable, Fibre Optic cable (FOC), Unguided Media -

Radio waves, IR waves, microwaves links. Switching: Circuit switching, packet switching

Unit -3 Data link layer

Data link layer design issues: Framing Error control, Flow control, Error detection and correction, Data link protocol: stop and wait Protocol, Sliding Window Protocol: Co-back N, selective Repeat.

Unit - 4 Medium Access Sup layer and Network Layer.

Traditional ethernet (concept of CSMA/CD), Fast ethernet, Gigbyte ethernet, IEE 802.4 (TB) token bus, 802.5 (TR) token ring 802.11 (WLAN) - Bridges and Switches.

Network layer concepts and Routing algorithms: IPv6, IPv4, Address mapping, ICMP - DVR (distance vector Routing) - LSR (link state Routing)

Multicase Routing, CIDR, Classless Inter Domain Routing)

Unit - 5 Transport layer and Application Layer.

Transport layer: User Datagram Protocol, (UDP), Transmission Control Protocol (TCP), Congestion Control (CC), Quality of services (QOS)

Application Layer- Domain Name Space (DNS), Email, FTP (File Transfer Protocol) World Wide Web (WWW), SNMP, HTTP (HyperText Transfer Protocol).

Text Book: B.A. Forouzan

"Data Communication and Networking"