B. Sc. - V Semester: Information Technology

Choice Based Credit Course - CBCIT – 501

[*Data Communication and Computer Networks*]

(Credits: Theory-3, Practicals-2)

THEORY: Lectures – 45 Hours / 68-70 Periods

Internal assessment marks: 15 | Term end examination marks: 60 | Maximum Marks: 75

Unit – I: Introduction to Computer Network

Computer Network Fundamental and types of Computer Network LAN, MAN, WAN, Transmission Media, Transmission modes, Line Configuration, Wireless and Wired Network Broadcast and Point to Point Network, Network Topologies, ISO-OSI Reference Model, TCP/IP Model.

Unit – II: Data Link Layer

Functions at Data Link Layer, Framing and Correction Codes: Checksum, CRC, Hamming Code, Flow Control: Stop & Wait and Sliding Window Protocols, Data Link Protocols: HDLC and PPP, Medium Access Sub-Layer, LLC Protocol, IEEE Overview of IEEE 802.2, 802.3, 802.5 802.6.

Unit – III: Network Layer and Transport Layer

Functions of Network Layer, Networking & Internetworking Devices ,Routing Protocols & Algorithms, Principles of Congestion Control, Ipv4 Address, Ipv4 Addressing, Ipv6 Address, Internetworking Basics, Functions of Transport Layer, Flow Control & Buffering, Introduction To TCP/UDP Protocols and their Comparison.

Unit – IV: Common Network Architecture

Connection Oriented & Connectionless N/Ws, Frame Relay, Example of N/Ws-P2p, X.25, ATM Ethernet, Wireless LANS – 802.11, 802.11x, Gigabit, Broad Band Networks: Integrated Service Digital Networks (ISDN), Broad Band ISDN, ATM,Very Small Aperture Terminal(VSAT).

Unit – V : Internet and Protocols

World Wide Web (WWW), Domain Name System (DNS), E-Mail, File Transfer Protocol (FTP), Hyper Text Transfer Protocol (HTTP), E-Mail Protocols: Mime & SMTP, POP, IMAP, Telnet – Remote Communication Protocol, Proxy Server, Proxy Web Servers,Working Of Internet Applications.

Text books:

1. Computer Networks, Andrew S. Tanenbaum, PHI / Pearson Education Inc.
2. Data communication and Networking, Behrouz A. Forouzan, Tata McGraw-Hill.
3. Internet Law-Text and Materials, chris Reed, universal law Publishing co., new delhi

Reference book:

1. Data and computer communication, William stallings, pearson education.
2. Computer and communication networks, nader F. Mir, Pearson Education, 2007.
3. Data &computer communication, black, PHI.

Signature of Convener & Members, Board of Studies: