and buffer registers.

UNIT-IV

Memory:

Main memory, RAM, static and dynamic, ROM, EPROM, EEPROM, EAROM, Cache and Virtual memory.

UNIT- V

Interconnecting System components:

Buses, Interfacing buses, Bus formats – address, data and control, Interfacing keyboard, display, auxiliary storage devices and printers. I/O cards in personal computers.

Introduction to Microprocessors and Microcontrollers: introduction to 8085 micropocesor, examples of few instructions to understand addressing techniques. Difference between microprocessor and microcontrollers.

Recommended Books

1. Andrew S. Tanenbaum , Structured Computer Organization,Printice Hall.

2. William Stallings, Computer Organization and Architecture , Sixth Edition, Pearson.

BCA 107: Practical I: PC Software and Basic Electronics Lab.

Experiments based on papers BCA 102 and BCA 106.

BCA 107: Practical II: C Programming Lab.

Experiments based on paper BCA 103.

Second Year B.C.A.

(Effective from session 2011-12)

BCA 201: Computer Communications and Networking

UNIT-I

Protocol Architecture : Overview: Communication model, Communication Tasks, Data Communication Networking: WAN, LAN,Wireless Networks. Basics of Network Software: Protocol and protocol architecture, Protocol functions, Design Issues for the layers, interfaces &Services, Connection oriented and connectionless services, service primitives, relationship of services to protocols , ISO REF Models, TCP/IP Model.

Data Communications: Data Transmission: Concepts of Frequency,Spectrum, bandwidth, Electromagnetic spectrum and frequencies for data communication, Fourier analysis , Data and signal, Transmission impairments, channel capacity, Nyquist bandwidth, Shannon capacity formula ,decibels and signal strength, Trans-

mission media:Coaxial, twisted pair, Comparative study of Categories of cables, Coaxial, Optical Fibers, Wireless transmission: Terrestial Microwave, satellite, Broadcast Radio,Infrared,.

UNIT-II

Data Encoding: (Brief idea of NRZ, Bipolar AMI, B8ZS, HDB3, ASK ,FSK, PSK,PCM,AM,FM,PM), Spread Spectrum. Asynchrous and Synchronous transmission, Full and Half duplex, Interfacing, Functional and Procedural aspects of V.24,

Data Link Control: Flow control: Stop and Wait, Sliding window, Error detection: Parity Check,CRC. Error control: Stop and Wait ARQ, Go back-N ARQ, Selective-Reject ARQ, Brief idea of HDLC and other Data Link control protocols

UNIT-III

Circuit Switching: Simple switching Network, Circuit Switching Networks, Brief idea of following (detail working) not required:

Circuit Switching Concepts: Space Division switching, Time Division Multiplexing, Routing in circuit switching Networks, Control Signalling, Inchannel & common channel signaling, Brief idea of SS7. Packet Switching: Packet switching principles, Routing,X.25

UNIT-IV

LAN Technology: LAN architecture, IEEE 802 standards, Ethernet (CSMA/CD): Medium Access Control, 10Mbps, 100Mbps, Gigabit Ethernet. Brief survey of other LAN systems (Token ring,FDDI,ATM, Fiber channel). Wireless LANS, Bridges, Latest trends in LAN technologies

LAN Devices: Study of specifications of L2 and L3 switches, Structured cabling, Passive components.

UNIT-V

Principles of Internetworking, connection less Internetworking, IP, IPv6, IP multicasting. Routing protocols, TCP, UDP, SNMP,SMTP and MIME, HTTP.

Recommended Books :

1. William Stallings: Data & Communications,Sixth Edition

2. A. S. Tanenbaum : Computer Networks