

COMPUTER SCIENCE&ENGINEERING

Unit-I:DigitalElectronics (Basics)

Number systems - Conversions-Codes – Logic gates AND, OR, NOT, NOR, NAND and XOR – BooleanExpressions-De-Morgan'stheorems–K-Map-CombinationalCircuits–Adders-Encoders & Decoders - Multiplexers and De-multiplexers- Latches - Flip-flops – Edge and Leveltriggering- Counters -Registers – Semiconductormemories.

Unit-II:Microprocessors (Basics)

8086 Microprocessor – Architecture, Segmentation concepts – Instruction set of 8086 – Instructionformats – Addressing modes of 8086 – Interrupts Assembly Language Programming – Peripheraldevices&interfacing–INTEL8255, 8257, 8251A,and 8279.

Unit-III:ComputerOrganization

Functional blocks of Digital Computer – Stored program concept – Fixed point, Floating pointnumber representations – Instruction formats - Addressing modes– Memory hierarchy – Virtualmemory, Associative memory – Cache memory – I/O Organization – Modes of data transfer –ProgrammedI/O,DMA,InterruptinitiatedI/O–PipelineandVectorprocessing– Flynn'sclassification.

Unit-IV:CProgramming andDataStructures

Algorithms – Flowcharts - C Tokens - Data types - Operators and expressions – Precedence andAssociativityofoperators–Typeconversions-Controlstatements–Arrays–Memory allocations –Strings–Functions,parameterpassing–Pointers-Structures,Unions-Storageclasses– Preprocessordirectivestatements – Files

Data Structures– Abstract Data Types - Time and Space complexities – Stacks and Queues - Linked Lists – Binary trees – Tree traversal techniques - Sorting: Bubble, Selection, Insertion,Quickand Merge sorts -Searching: Sequentialand Binarysearch techniques.

Unit-V:ComputerHardware& Networking

BIOS–ComponentsofMotherboard –Processors–HardDiskDrives–Input&Outputdevices –

Networking–Classificationofnetworks-OSIreferencemodel,TCP/IPreferencemodel–Network topologies: Bus, Ring, Star, Mesh, Hybrid – LAN components: Coaxial, Twisted pair,Optical fiber cables and Connectors – LAN devices: Repeaters, Hubs, Bridges, Switches, NIC,Routers, Modems - TCP/IP addressing scheme – IP address classes – IP Sub-netting – Linuxcommands.

Unit-VI:OperatingSystems:

OperatingSystemconcepts,Services,Types,Systemcalls–ProcessManagement– CPU schedulingalgorithms:FCFS,SJF,RoundRobin,Priority,Multilevelscheduling–Threads–

Semaphores - Inter Process Communication - Deadlocks - Memory Management - Overlays, Paging, Segmentation, Virtual memory, Page replacement algorithms: FIFO, LRU, Optimal - Thrashing - Disk scheduling - Disk scheduling algorithms: FIFO, SSJF, SCAN, C-SCAN - File management - file operations, access methods, directory structure.

Unit-VII: RDBMS

Concepts of Database systems, Data abstraction - Data independence, Data models, E-R model - Structure of Relational database - DDL, DML and DCL commands - Keys - Normal Forms: 1st, 2nd, 3rd and BCNF - SQL - data types, operators - joins - views, sequences, synonyms and indexes - PL/SQL - datatypes, control structures, cursor management, triggers, exceptions, functions, procedures, recursion and packages.

Unit-VIII: Object Oriented Programming Through C++

Concept of OOPs - classes and objects - Constructors and destructors - Function overloading and Operator overloading - Inheritance types - Virtual functions - friend functions - inline functions - this pointer - I/O manipulators - File and I/O functions - Templates.

Unit-IX: Java Programming

Java - data types, variables, operators, arrays - Classes and Objects - Methods - Constructors - Method overloading, Method overriding - Static final members - Inheritance - super, final keywords - Interfaces - Packages - Exception handling - Multithreading - Applets - AWT - Event handling - JDBC - Servlets.

Unit-X: Internet Programming

Internet fundamentals - HTML, Tags, Attributes, Formatting text - Cascading Style Sheets - Web servers - Javascript - datatypes, Operators - control structures - procedures, functions and arrays - PHP - data types, variables, operators, control structures, arrays, functions, concept of accessing databases - sessions and cookies.

Unit-XI: Data backup, Data security, Server Management, Data retrieval, FTP Management

Unit-XII: Design and Analysis of Algorithm

- Dynamic programming - Optimal binary search trees, Travelling Sales person problem,
- Greedy method - Applications - Job Sequencing
- Divide and conquer - Quick sort, Merge sort
- Performance Analysis - Space complexity
- Big on Notation, Omega Notation
- FIFO Branch and Bound Solution
- Back Tracking

Unit-XIII: Distributed System

- OS layers
- Process and Threads
- Distributed File System- Introduction
- Transactions & concurrency
- Reprication – Fault tolerant services, Distributed shared memory, peer to peer system- Introduction

Unit-XIV: Mobile Computing

- Introduction to Android Operating system
- User interface components
- Persistent storage
- Secure and retrieving data
- Grid and Table Layouts.
