

CURRICULUM STRUCTURE FOR DIPLOMA IN COMPUTER SCIENCE & ENGINEERING

3RD SEMESTER

Sl. No.	Sub. Code	Name of the Subject	Teaching Scheme (hrs/wk)			Evaluation Scheme					Total marks
			L	T	P	Theory			Practical		
						End Exam	I.A	Assignment	End Exam	Sessional	
1	TH-1	Data Structure	4	1	0	80	15	5			100
2	TH-2	Fundamental of Electronics devices	4	0	0	80	15	5			100
3	TH-3	Digital Electronics	4	0	0	80	15	5			100
4	TH-4	Computer Organisation	4	0	0	80	15	5			100
5	TH-5	Engineering Mathematics III	4	0	0	80	15	5			100
6	PR-1	Data Structure Lab using C	0	0	6				50	50	100
7	PR-2	MIS lab.	0	0	6				50	25	75
8	PR-3	Digital Electronics lab	0	0	6				50	25	75
		Total	20	1	18	400	75	25	150	100	750

L T P
4 1 0

Theory :100
End Term Exam : 80
I.A. : 20

RATIONALE

The effectiveness of implementation of any application in computer mainly depends on, how effectively its information can be stored in the computer. For this purpose various structures are used. This paper will expose the students to various fundamentals structures arrays, stacks, queues, trees etc. It will also expose the students to some fundamental, I/O manipulation techniques like sorting, searching etc.

1.0 INTRODUCTION:	04
1.1 Concepts of Data, Information, data types	
1.2 Data structure & Explain different operations	
1.3 Abstract & physical data types	
1.4 Algorithms & their complexities	
1.5 Time, space tradeoff	
2.0 ARRAYS	07
2.1 Introduction	
2.2 Linear arrays, representation of linear array In memory	
2.3 traversing linear arrays, inserting & deleting elements	
2.4 Multidimensional arrays, representation of two dimensional arrays in memory (row major order & column major order), and pointers	
2.5 Sparse matrices.	
3.0 STRING PROCESSING	03
3.1 Basic Terminology, Storing Strings	
3.2 Character Data Type,	
3.3 String Operations, e.g string concatenation, reversal etc. Pattern Matching Algorithms	
4.0 STACKS & QUEUES	08
4.1 Fundamental idea about Stacks and queues as LIFO & FIFO structure	
4.2 Array representation of Stacks	
4.3 Arithmetic expression , polish notation & conversion from infix to postfix using stack	
4.4 Application of stacks, recursion	
4.5 Queues, circular queue, priority queues.	
5.0 LINKED LIST	08
5.1 Introduction to linked lists	
5.2 Representation of linked lists in memory	
5.3 Traversing a linked list, searching	
5.4 Garbage collection	
5.5 Insertion into a linked list, Deletion from a linked list, header linked list	
5.6 Doubly linked list, circular linked lists.	

6.0 TREE	08
6.1 Basic terminology of Tree	
6.2 Binary tree, its representation and traversal, Threaded Binary Tree, binary search tree, searching, binary trees	
6.3 Insertion & deletion in a binary search tree	
6.4 Heap, heap sort	
6.5 General trees	

7.0 GRAPHS	06
------------	----

7.1 Graph terminology & its representation,	
7.2 Adjacency Matrix, Path Matrix	
7.3 Warshall's algorithm, shortest paths	
7.4 Linked representation of a graph, operation on Graphs, traversing a graph.	

8.0 SORTING & SEARCHING	08
-------------------------	----

8.1 Algorithms for Bubble sort, Selection sort, Insertion sort, Quick sort, Radix Sort, Merge-sort	
8.2 Merging	
8.3 Elementary search techniques such as Linear search, Binary search.	

9.0 FILES	
-----------	--

9.1 Different types of files organization and their access method,	
9.2 Hashing, Hash function, collision resolution, open addressing, Linear Probing & modification, chaining.	

1. Data Structure by S. Lipschutz - (Schaum Series)
2. Introduction to Data Structure in C by :A.N.Kamthane; Pearson Education
3. Data Structure A pseudocode approach with C, Gilburg, Forouzen Cengage Learning
4. Data Structure & Algorithms; PAI; TMH

Fundamental of Electronics devices

L	T	P	Theory	:100
4	0	0	End Term Exam	: 80
			I.A.	: 20

RATIONALE

Electronics being the basic building block for computer hardware, happens to be the foundation for a student of computer science & Engineering. In this subject the student will be expressed to the various analog electronics component concepts, which are the basic units of any modern computer and its peripheral devices.

COURSE CONTENT	PERIODS
----------------	---------

1. Semiconductor Theory	07
--------------------------------	-----------

- 1.1 Introduction to semiconductor.
- 1.2 Current carriers in semiconductor
- 1.3 Atomistic picture of Germanium & Silicon
- 1.4 Electric current, free electron density, & mobility in semiconductor
- 1.5 Current due to hole in semiconductor
- 1.6 Pure & impure semiconductor
- 1.7 Doping of minority carriers
- 1.8 Temperature dependency of semiconductor
- 1.9 History of development of semiconductor

2. The PN junction in forward & reversed bios	08
--	-----------

- 4.1 Introduction
- 4.2 PN junction thermal equilibrium
- 4.3 PN junction under forward bios
- 4.4 PN junction under reverse bios
- 4.5 Combined V-I characteristics under forward & reverse bios

3. Photo Diode, phototransistors & PNP structure	10
---	-----------

- 3.1 Introduction
- 3.2 Carrier generation by light in a uniform semiconductor
- 3.3 PN junction photo diode for light detection
- 3.4 Phototransistor concept only
- 3.5 Miscellaneous photo detector structures
- 3.6 MOSFET structure, types & mode of operation

4. AUDIO POWER AMPLIFIERS	08
----------------------------------	-----------

- 4.1 Differentiate between voltage and power amplifier.
- 4.2 Classify power amplifier.
- 4.3 Explain the working principle of different types of power amplifier (class-A, class-AB, class-B and class-C amplifiers).
- 4.4 Derive collector efficiency of class-A and class-B power amplifiers.
- 4.5 Explain construction and working principle and advantages of push pull amplifiers and complementary symmetry amplifiers.
- 4.6 Discuss heat generations due to power dissipation.
- 4.7 Explain the concept of thermal resistance, thermal capacity, heat sinks,

5. FIELD EFFECT TRANSISTORS AND CIRCUIT ANALYSIS

07

- 5.1 State concept of FET.
- 5.2 Differentiate between JFET & BJT.
- 5.3 Classify FET.
- 5.4 Explain construction, working principle and characteristic of JFET.
- 5.5 Explain JFET as an amplifier.
- 5.6 Define parameters of JFET.
- 5.7 Establish relation among JFET parameters.
- 5.8 Explain JFET biasing method and connection.
- 5.9 Derive voltage gain of a JFET amplifier.
- 5.10 Explain construction and working principle of MOSFET.

6. FEED BACK AMPLIFIER

06

- 6.1 Define and classify feedback amplifier.
- 6.2 Explain principle of negative feed back with the help of block diagram.
- 6.3 Define gain of an amplifier with feed back.
- 6.4 Discuss the advantages/ effects of negative feed back in amplifier.
- 6.5 Derive input output impedance of negative feed back amplifier.
- 6.6 Explain principle of working, characteristics and use of emitter follower.

7. OSCILLATOR

10

- 7.1 Define and classify Oscillator.
- 7.2 State and explain fundamental principle of working of oscillator.
- 7.3 Explain essentials of transistor oscillators.
- 7.4 Explain Barkhausen criteria.
- 7.5 Explain construction, working principle and use of Hartley, Collpits, Phase shift, wein bridge and crystal oscillators .

8. TUNED AMPLIFIER

04

- 8.1 Define and classify Tuned amplifier.
- 8.2 Explain advantage of Tuned amplifier.
- 8.3 State limitations of Tuned amplifier for low frequency applications.
- 8.4 Explain working principle of single tuned and double tuned amplifiers.

Total 60

TEXT BOOKS

1. Semiconductor devices by ; M.K.Chuthan & Bhatt; TMH
2. Principle of Electronics by V.K.Meheta
3. Principles of electronics Circuits, B.L.Thereja, S.Chand

Digital Electronics

L T P
4 0 0

Theory :100
End Term Exam : 80
I.A. : 20

RATIONALE

All the modern computer operate on the principles of digital electronics. This subject will introduces the various concepts of digital electronics like, various number system, logic gates, Boolean algebra etc. to the students. By going through this paper, the student will acquaint him self to the various basic digital circuits like flip-flops, multi-vibrators etc., which are the main constituents of the digital computers.

COURSE CONTENT

PERIODS

1. NUMBER SYSTEM

05

- 1.1 Discuss number system and radix.
- 1.2 Describe different number systems.
- 1.3 Compute binary addition, subtraction, multiplication and division.
- 1.4 Perform binary to decimal conversion and vice versa.
- 1.5 Convert binary to octal and vice versa.
- 1.6 Perform binary to hexadecimal conversion and vice versa.
- 1.7 Solve decimal to octal conversion and vice versa.
- 1.8 Convert decimal to hexadecimal conversion and vice versa.
- 1.9 Do 1's complement and 2's complement.
- 1.10 Study need for 1's and 2's complement.
- 1.11 Compute subtraction using 1's and 2's complement.
- 1.12 Solve different examples regarding different codes.

2. BINARY CODES

04

- 2.1 State and explain binary code.
- 2.2 Differentiate between weighted and non-weighted code.
- 2.3 Describe BCD code, XS-3 code, Gray code.
- 2.4 Perform BCD addition and subtraction.
- 2.5 Distinguish between ASCII and EBCDIC code.
- 2.6 Convert BCD to XCS-3 code and vice versa.
- 2.7 Do the BCD to gray code conversion and vice versa.
- 2.8 Describe the XS-3 to Gray code conversion and vice versa.
- 2.9 Solve different examples regarding different codes.

3. LOGIC GATES

04

- 3.1 State and explain logic gate.
- 3.2 Discuss different types of digital logic system.
- 3.3 Draw OR, AND, NOT, XOR, XNOR Gates with their truth table.
- 3.4 Describe universal logic gate.
- 3.5 Discuss NAND and NOR gate with their truth table.
- 3.6 Convert all the logic gate outputs using universal logic gate.
- 3.7 Draw the pin diagram of different logic gate ICs.

4. BOOLEAN ALGEBRA & COMBINATIONAL LOGIC.

05

- 4.1 Study the theorems & postulates of Boolean algebra.
- 4.2 Differentiate between combinational logic circuit & sequential logic circuit.

- 4.3 Describe the relation of Boolean algebra to switching elements.
- 4.4 Obtain Boolean expression from a truth table.
- 4.5 State & explain K-Map.
- 4.6 Describe a 2-variable, 3-variable & 4-variable K-Map.
- 4.7 Determine the minimal equation.
- 4.8 Compute minimal equations for SOP & POS.
- 4.9 Explain expression graphical representation of Boolean functions.

5. FUNCTIONS OF COMBINATIONAL LOGIC

08

- 5.1 Explain the necessity of combinational circuit.
- 5.2 Design a Half-Adder & Full-Adder circuit.
- 5.3 Describe & design Half-Subtractor & Full-Subtractor.
- 5.4 Convert the entire adder & subtractor circuit using universal logic gates.
- 5.5 Study parallel binary adder.
- 5.6 Discuss a magnitude comparator circuit with expression.
- 5.7 Define encoder & decoder.
- 5.8 Describe the decoder circuit for binary to gray, BCD to decimal & BCD to 7-segment.
- 5.9 Discuss the encoder circuit for
 - 5.9.1 Gray to Binary.
 - 5.9.2 BCD to XS-3.
 - 5.9.3 XS-3 to BCD.
- 5.10 Differentiate between MUX & DEMUX.
- 5.11 Describe 4 to 1 line, 8 to 1 line MUX.
- 5.12 Show the principle of operation of 1 to 16 lines DE-MUX.
- 5.13 Study parity generator/checker circuit.

6. FLIP- FLOPS & MULTIVIBRATORS

08

- 6.1 Classify different types of flip-flops.
- 6.2 Study of a RS FF using NAND & NOR gate.
- 6.3 Draw the waveforms for clock RS FF with its operation.
- 6.4 Explain edge-triggered Multivibrator.
- 6.5 Describe a DFF with its waveform.
- 6.6 Describe a TFF with its waveform.
- 6.7 Describe the working principle of master-slave J-K FF with its waveforms.
- 6.8 Explain the conversion from.
 - 6.8.1 JK FF to SR FF.
 - 6.8.2 JK FF to T FF.
 - 6.8.3 JK FF to D FF.
- 6.9 Study flip-flop application.
- 6.10 Solve different problems regarding flip-flop.

7. COUNTERS & SHIFT REGISTERS

08

- 7.1 Define counter & shift register.
- 7.2 Differentiate between ripple & synchronous counter.
- 7.3 Describe the working of a 4-bit ripple counter.
- 7.4 Distinguish between.
 - 7.4.1 4-bit synchronous serial counter.
 - 7.4.2 4-bit synchronous parallel counter.
- 7.5 Study the module N counter.
- 7.6 Explain divide by N counter.
- 7.7 Design a skipping state counter.
- 7.8 Describe & design.
 - 7.8.1 Mod-6 counter.
 - 7.8.2 Mod-12 counter.
 - 7.8.3 Decade counter.

- 7.9 Describe the working of a Ring counter.
- 7.10 Study Johnson counter.
- 7.11 Study counter application.
- 7.12 Describe the working of a;
 - 7.12.1 4-bit serial-in-serial-out (SISO) shift register.
 - 7.12.2 4-bit serial-in-parallel-out (SIPO) shift register.
 - 7.12.3 4-bit parallel-in-serial-out (PISO) shift register.
 - 7.12.4 4-bit parallel-in-parallel-out (PIPO) shift register.
- 7.13 Discuss the shift register applications.

8. MEMORIES

06

- 8.1 State & explain.
- 8.2 Explain ROM, PROM, EPROM, & E² PROM.
- 8.3 Differentiate between ROM & RAM.
- 8.4 Study different types of RAM.
- 8.5 Distinguish between SRAM & DRAM.
- 8.6 Study detail structure of memory expression.
- 8.7 Describe magnetic bubble memories.
- 8.8 Describe the working principle of magnetic disk memories.
- 8.9 Explain special memories like CCD & CD-ROM.
- 8.10 Discuss memory applications.

9. D/A & A/D CONVERTERS

06

- 9.1 Describe D/A & A/D converter.
- 9.2 Draw a weight-register type D/A converter circuit with neat sketch.
- 9.3 Discuss a ladder type D/A converter circuit.
- 9.4 Compare the features of A/D conversion method.
- 9.5 Study of a Dual-slope A/D converter.
- 9.6 Describe a Successive approximation A/D converter circuit.
- 9.7 Discuss D/A applications.

10. INTRODUCTION TO DIGITAL LOGIC FAMILIES

06

- 10.1 Discuss logic family.
- 10.1 Explain different types of TTL & CMOS logic gate ICs.
- 10.2 Study different characteristics of logic families ICs.
- 10.3 Study different characteristics of logic families like;
 - 10.3.1 Propagation delay.
 - 10.3.2 Power dissipation.
 - 10.3.3 Operating temp.
 - 10.3.4 Fan-in.
 - 10.3.5 Fan-out.
 - 10.3.6 Voltage level.
 - 10.3.7 Relative cost.
- 10.4 Study the pin-out connection of digital IC chips.

Total 60

TEXT BOOKS

- 1. Digital Electronics by R.K.Gaur.
- 2. Digital principle by R.P.Jain.
- 3. Digital Electronics by Floyad.
- 4. Switching, they & logic design by V.K.Jain.
- 5. Principle of Digital Electronics by Morris & Mano.

Computer Organisation

L	T	P	Theory	:100
4	0	0	End Term Exam	: 80
			I.A.	: 20

RATIONALE

Computer Organization is the basic foundation paper for any hardcore computer engineer. In this subject students will be exposed to the theoretical aspects of different functional units of a digital computer and fundamental idea how different units of a computer system work together to achieve a common goal.

COURSE CONTENT

PERIODS

1. OVERVIEW	04
1.1 Brief History of Computers	
1.2 Information	
1.3 Hardware and Software	
1.4 Processing	
1.5 Memory	
1.6 Input and Output	
1.7 von Neumann Model	
2. HARDWARE BUILDING BLOCKS	06
2.1 Introduction	
2.2 Logic Gates	
2.3 Combinational circuits.	
2.4 Sequential circuits	
2.5 Integrated Circuits	
2.6 Clock signals	
2.7 Register	
2.8 Memory & Other elements.	
3. PROCESSOR INSTRUCTION SET-I	07
3.1 Instruction format	
3.2 Programmable registers	
3.3 Program example	
3.4 Conditional execution	
3.5 Instruction classes & Instruction Set	
3.6 Iteration	
3.7 I/O Instruction	
3.8 PSW	
4. PROCESSOR INSTRUCTION SET-II	06
4.1 Addressing modes	
4.2 Function & function calls	
4.3 Table of instruction	
4.4 Arithmetic & Logic instructions	
4.5 Character & String operation	
4.6 Instruction set role	
5. PROCESSOR DESIGN	08
5.1 Introduction	
5.2 Processor Architecture	
5.3 Control Signals and Control Unit	
5.4 Instruction Formats and Codes	

- 5.5 Arithmetic and Logic Unit (ALU)
- 5.6 Data Transfer and Manipulation
- 5.7 Program Counter
- 5.8 Nested Function Calls and the Stack
- 5.9 Cache Memory
- 5.10 Pipelined Implementation
- 5.11 Design of a RISC Processor

6. CONTROL UNIT 08

- 6.1 Introduction
- 6.2 Implementing a Typical Instruction
- 6.3 Hardwired Control Unit
- 6.4 A Limitation of Hardwired Control
- 6.5 Basic Concept of Microprogrammed Control
- 6.6 Microinstruction Sequencing
- 6.7 Microprogrammed Control Unit
- 6.8 Microinstruction Formats
- 6.9 Comparison of Hardwired and microprogrammed Control Units

7. MEMORY ORGANISATION 06

- 7.1 Memory Hierarchy
- 7.2 Partitioned Memory
- 7.3 Non-contiguous Memory Allocation
- 7.4 Principle of Virtual Memory
- 7.5 Virtual Memory with Paging
- 7.6 Segmented Logical Address Space
- 7.7 Associative Memory
- 7.8 Cache Memory Organisation

8. INPUT AND OUTPUT ORGANISATION 08

- 8.2 Input/Output Devices and Controllers
- 8.3 Accessing Devices
- 8.4 Device Status and Control
- 8.5 Interrupt Mechanism and Handling
- 8.7 Modes of Data Transfer
- 8.8 Character Devices and Block Devices
- 8.9 Direct Memory Access
- 8.10 I/O Interfaces
- 8.11 I/O Processors

9. I/O DEVICE & MEMORY 07

- 9.1 Introduction
- 9.2 Keyboard and Mouse
- 9.3 Graphics Display
- 9.4 Display Technology
- 9.5 Software for User Interaction
- 9.6 Magnetic Disks
- 9.7 Optical Disks
- 9.8 Flash Memories
- 9.9 Printers
- 9.10 Clock, Speaker and Microphone

Books

1. Computer System Organization ; By : N. Jotwani. TMH
2. Structured computer organization - by A.S. Tanenbaum (PHI)

Engineering Mathematics – III

L	T	P	Theory	: 100
4	0	0	End Term Exam	: 80
			I.A.	: 20

OBJECTIVE

On completion of study of Engineering Mathematics - III the students will be able to:

1. Apply matrices in Engineering mechanics, electrical circuits & linear programming.
2. Transform Engineering problems to mathematical models with the help of differential equation & familiarise with the methods of solving by analytical method, transform method, operator method & numerical method.
3. Solve algebraic & transcendental equations by iterative methods easily programmable in computers.
4. Analyse data & develop interpolating polynomials through method of difference.

COURSE CONTENT

PERIODS

1. MATRICES

04

- 1.1 Define rank of a matrix.
- 1.2 Perform elementary row transformation to determine rank of a matrix.
- 1.3 Define Rouché's Theorem for consistency of a system of linear equations in n unknowns.
- 1.4 Solve equations in three unknowns testing consistency.

2. LINEAR DIFFERENTIAL EQUATION

12

- 2.1 Define homogeneous & non homogeneous diff. Equations with constant coefficient with examples.
- 2.2 Find general solution of linear equations in terms of C.F & P.I.
- 2.3 Derive rules of finding C.F & P.I in terms of operator D .
- 2.4 Explain method of variation of parameter to solve equation of the form $y''+py'+qy=f(x)$.
- 2.5 Describe methods of solutions of Cauchy's & Legendre's linear equation with variable coefficient.
- 2.6 Define partial differential equations(P.D.E.).
- 2.7 Form partial differential equations by eliminating arbitrary constants & arbitrary functions.
- 2.8 Solve partial differential equations of the form $Pp+Qq=R$.
- 2.9 Derive rules of finding C.F and P.I of Homogeneous linear partial differential equation with constant coefficient solve problems in relation to O.D.E. & P.D.E.

3. LAPLACE TRANSFORM (L.T.)

12

- 3.1 Define Gamma function and $\Gamma(n+1) = n!$ and find $\Gamma(1/2) = \sqrt{\pi}$ (No problem).
- 3.2 Define laplace transform of a function $f(t)$ & inverse laplace transform.
- 3.3 Derive L.T of standard functions and explain existence conditions of L.T.
- 3.4 Explain linearity, shifting and change of scale property of L.T.
- 3.5 Formulate L.T of derivatives, integrals, multiplication by t^n , division by t .
- 3.6 Derive formula of inverse L.T.
- 3.7 State and derive convolution theorem.
- 3.8 Solve linear differential equation with constant coefficients associated with initial conditions using transform method.

- 3.9 Define unit step function and derive second shifting property.
- 3.10 Solve problem from 3.3 to 3.9.

4. FOURIER SERIES (F.S.)

12

- 4.1 Define periodic functions.
- 4.2 State dirichlet's conditions for the Fourier expansion of a function and its convergence.
- 4.3 Express periodic function $f(x)$ satisfying dirichlet's conditions as a Fourier series
- 4.4 State Euler's formulae.
- 4.5 Obtain F.S of continuous functions & functions having points of discontinuously
- 4.6 Obtain F.S of functions having arbitrary period.
- 4.7 Define even and odd functions and obtain their F.S.
- 4.8 Explain half range series.
- 4.9 Solve problems on 4.1 to 4.8.

5. NUMERICAL METHODS

04

- 5.1 Appraise limitation of analytic method of solution of algebraic & transcendental equations.
- 5.2 Derive iterative formula for finding solutions of algebraic & transcendental equations by
 - 5.2.1 Bisection method.
 - 5.2.2 Method of false position.
 - 5.2.3 Newton Raphson method.
- 5.3 Solve problems on 5.2.

6. FINITE DIFFERENCE & INTERPOLATION

12

- 6.1 Explain finite difference & form table for forward & backward difference.
- 6.2 Explain differences of a polynomial and express it in factorial notation.
- 6.3 Define shift operator E and establish relation between E ,
- 6.4 Derive Newton's forward and backward interpolation formula for equal interval.
- 6.5 State lagrange's interpolation formula for unequal intervals.
- 6.6 Derive numerical differentiation using forward and backward difference.
- 6.7 Explain numerical integration and state
 - 6.7.1 Newton-cote's formula.
 - 6.7.2 Trapezoidal rule.
 - 6.7.3 Simpson's 1/3 rule.
- 6.8 Solve problems on 6.1 to 6.7.

7. NUMERICAL SOLUTION OF ORDINARY DIFFENTIAL EQUATIONS

04

- 7.1 State and explain formula for solving ordinary differential equations using
 - 7.1.1 Taylor's series method.
 - 7.1.2 Euler's method.
 - 7.1.3 Runga-kutte method up to 4th order.

TEXT BOOKS

- 1. Higher Engineering Mathematics by Dr. B.S.Grewal.

REFERENCE

- 1. Numerical Methods by Goel & Mittal
- 2. A Text Book of Matrix Algebra by S. Biswas
- 3. Numerical Methods for Engineering by S. K. Gupta
- 4. Partial Differential Equation by P. Prasad & R. Rabindran
- 5. Theory of Matrices by Vatssa

DATA STRUCTURE LAB USING C

L T P
0 0 6

Practical : 50
Sessional : 50

Design, write, run and test computer programs using C language for the following set of tasks / problems.

1. Implementation of 1D & 2D Array
2. Implementation of Stack
3. Implementation of insertion & deletion in Stack
4. Implementation of insertion & deletion in Queue
5. Implementation of insertion & deletion in Linked list
6. Implementation of Insertion sort
7. Implementation of Selection sort
8. Implementation of Bubble sort
9. Implementation of Quick sort
10. Implementation of Heap sort
11. Implementation of Radix sort
12. Implementation of Binary tree traversal
13. Implementation of Linear search
14. Implementation of Binary search

Books :

1. Computer lab referral for diploma students ; T.R.Jagadesh; Unv. S. Press
2. Data Stru. Data Structure A pseudocode approach with C, Gilburg,Forouzen Cengage Learning

MIS Lab

L T P
0 0 6

Practical : 50
Sessional : 25

Introduction to FOXPRO

Introduction, Special features of FoxPro, Starting FoxPro, Terminologies used in FoxPro File/Table-Record-Fields, Conventions used for naming fields, Data types

Understanding Databases

Introduction, Opening a Table/Database, Adding records in a table, Close a file

Retrieving and Editing the Data

Introduction, List, Display, Record pointer, Moving the record pointer - Goto -Skip, Modifying data-Edit-Browse

Managing Databases

Introduction, Sorting, Indexing, Searching for record within the database -Locate-Find-Seek

Working with Reports

Introduction, Creating a report format, Generating a report, Previewing the Report-Grouping of data-Subtotals-Grand total

Getting Started with Programming

Introduction, Commands for writing programs - Say - Get-Read - Valid - Range, Picture, Input Accept - Cancel, Branching concepts - If-endif - Do case Otherwise

Programming Structures

Introduction, Looping commands - Do while - For-End for

Small project in FOXPRO

Introduction to MS Access and elementary data processing with Access.

DIGITAL ELECTRONICS LAB

L T P
0 0 6

Practical : 50
Sessional : 25

1. Implement AND, OR, NOT, NOR, NAND, XOR, XNOR gates & verify the truth table.
2. Study Universal properties of NAND AND NOR gates.
3. Implement Boolean function.
4. Implements K - MAP.
5. Implement Half - adder and full – adder using minimum number of logic gates
6. Implement Half - sub tractor and full - sub tractor using minimum number of logic gates.
7. Study flip-flops
 - i. JK flip flop.
 - ii. D flip flop.
 - iii. SR flip flop.
8. Study 4 - bit a synchronous up/down counter using gates.
9. Study 4 - bit synchronous up/down counter using gates.
10. Study mod 6, mod 10, mod 12, a synchronous counters.
11. Study ring counters.
12. Study shift registers
 - i. SISO
 - ii. SIPO
 - iii. PISO
 - iv. PIPO
 - v. Bi-directional
13. Study 8 - bit D/A & A/D conversion using IC only.
14. Study Multiplexer & De-multiplexer using IC only.
15. Study encoders & decoders.
16. Study display devices – LED/LCD, 7-segment display.

(All the above experiments are to be conducted giving thorough study of IC's)