B. Sc. (I.T.) TT Year

INFORMATION TECHNOLOGIES

PAPER - I

(Paper Code-0928)

AMPLIFIERS AND OSCILLATORS

- UNIT-I POWER AMPLIFIER : Classification of power amplifiers, requirement of power amplifiers, single ended class A power amplifier, and its efficiency, transformer coupled power amplifier, power dissipation curve, harmonic dissipation curve, harmonic distortion in pushpull power amplifier, power and efficiency calculation for pushpull for pushpull power amplifier, Distortion in pushpull power amplifier, Advantages of pushpull power amplifier.
- UNIT-II FEEDBACK AMPLIFIERS AND OSCILLATORS : Feedback in amplifiers, types of feedback positive, and negative feedback. Derivation of input and output impedance in voltage and current series feedback. Advantages of negative feedback. Positive feedback. Berkhauson criteria for sustained oscillator. RF oscillators-Hartley oscillatot, Colpetts oscillators (Qualitative study) relaxation osillators, Multivibrators-Astable, Monostable.
- UNIT-III OPERATIONAL AMPLIFIER AND POWER CONTROL DEVICES : Differential amplifier, operational amplifier, Characteristics of an ideal OPAMP, definition of input bias current input offset current, current driff, impout offset, common mode rejection ratio, slew rate, universal biasing technique, Application of OP-Amp, as inverting, noninverting amplifiers, differentiation, Integration, scal charger and voltage follower, Silicon controlled rectifier (SCR), Diac, Traic and UUT (Only qualitative study).
- UNIT-IV THE INTEL 8080/8085 MICROPROCESSOR : Introdution, the 8085 pin diagram and functions, The 8085 architecture, addressing modes, the 8080/8085 instruction set, the 8080/8085 data transfer instructions, the 8080/8085 arithmetic instructions, the 8080/8085 logical instructions the 8080/8085 stack, I/O and machine controlled instructions.
- UNIT-V PROGRAMMING THE MICROPROCESSOR : Machine and assembling languages simplified instruction set, Instruction set, arithmetic poeration, Instructions set logical operations, instruction set data transfer operations, instruction set branch operations, instructuion set-subroutine all and return operations, instruction set miscellaneous operations, writing a program, addressing modes, program branching, program looping using subroutines.

Programming the 8080/8085 microprocessor : Introduction straight-line programs looping programs, mathematical programs.

PAPER - II

(Paper Code-0929)

FUNDAMENTAL DATA STRUCTURE

UNIT-I Introduction to Data STructure : The concept of data structure, Abstract data structure, Analysis of Algorithm, The concept of list.

B.99 -TTT

Anifile/2018 (L. K. Gavel) (Jr. J. Dry house For) Provider (L. K. Gavel) (Jr. J. Dry house For) Provider (L. K. Gavel)

Stacks and Queues: Introduction to stack & primitive operation on stack, Stack as an abstract data type, Multiple Stack, Stacks application : infix, post fix, and Recursion, Introduction to queues, Primitive Operations on the Queues, Queue as an abstract data type, Circular Queue, Dequeue, Priority Queue.

- UNIT-II Linked List: Introduction to the linked list of stacks, The linked list of queues, Header nodes, Doubly linked list, Circular linked list, Stacks & Queues as a Circular linked list, Application of linked list.
- UNIT-III Trees: Basic Terminology, Binary Trees, Tree Representations as Array & Linked list, Binary tree representation, Traversal of binary trees : In order, Preorder & post order. Application of Binary tree, Threaded binary tree, B-Tree & Height balanced tree, representation of B+ & B* trees, Binary tree representation of trees, Counting binary trees, 2-3 Trees algorithm or manipulating 2-3 Trees.
- UNIT-IV Searching & Sorting: Sequential Searching, Binary search, Insertion sort, Selection sort, Quick sort, Bubble sort, Heap sort, Comparison of sorting methods.
- UNIT-V Tables & Graphs : Hash Table, Collision resolution Techniques, Introduction to graphs, Definition, Terminology, Directed, Undirected & Weighted graph, Representation of graphs. Graph Traversal Depth first & Breadth first search, Spanning Trees, minimum spanning Tree, The basic, Greedy Strategy for computing Algorithm of Kruskal and prims.

TEXT & REFERENCE BOOK :

Fundamentals of Data structure : By S. Sawhney & Horowith

Data Structure : By Trembley & Sorrenson.

Data Structure Using Pascal : By Tannenbaum & Alugenstein

Data Structure : By lipschuists (Schaume's Outline Series Mograw Hill Publication) Fundamentals of Computer Algorithm : By Ellis Horowitz and Sartaj Sawhney.

PRACTICAL WORK

- The sufficient practical work should be done for understanding the date structure with
- The sufficient practical work must be performed on stacks queues linked list, trees etc.
- All practical works should prepared in form of print outs and volusted while practical examination

Any 1/6/2018 (D. J. D. D. J. D