**CA9111 FUNDAMENTALS OF PROGRAMMING**

**L T P C**
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## UNIT I INTRODUCTION TO COMPUTER PROBLEM SOLVING

Introduction – The Problem – Solving aspect – Top down design – Implementation of algorithm's – Program Verification – The efficiency of algorithm's – The analysis of algorithm's.

## UNIT II PROGRAMMING, ALGORITHMS AND FLOWCHARTS

Programs and Programming – Programming Languages - compiler – Interpreter, Loader and Linker - Program execution – Classification of Programming Language- Structured Programming Concept- Algorithm.

## UNIT III BASICS OF 'C', INPUT & OUTPUT

Introduction- A simple C Program – Identifier – Keywords- Variable – Data Types of C – Program Statement – Declaration of Variables – Constants – Printf - Assignment Operator- Initialization – Operators and Expressions – Elementary Arithmetic Operations and Oerators- Expression Revisted – Lvalues and Rvalues – Type Conversion in C – Basic screen and keyboard I/O in C – Non-formatted input and output functions.

## UNIT IV CONTROL STATEMENTS,ARRAYS & STRINGS AND FUNCTIONS

Introduction- Specifying Test Condition for Selection and Iteration- Conditional Execution and Selection – Iteration and Repetitive Execution- Which loop should be used? – goto Statements – Nested Loops – One dimensional Array- strings: One – dimensional Character Arrays- Multidimensional Arrays- Arrays of Strings: Two – dimensional character array - the concept of functions- using functions- scope – storage classes- recursion- comparing iteration and recursion- analysis of algorithms.

## UNIT V POINTERS,USER-DEFINED DATATYPES AND VARIABLES

Introduction- understanding memory addresses- address operator- pointer- use of pointers- arrays and pointers – pointers and strings- array of pointers- pointer to pointer- pointers to functions- dynamic memory allocation- memory leak and memory corruption- structures- union- enumeration types- bitfields.

## TEXTBOOKS


1. How to solve it by computer , R.G.Dromey, pearson education , fifth edition, 2007.
2. Programming in C, Pradip Dey, Manas Ghosh, Oxford university press, 2007.

**REFERNCES**


1. Deitel and Deitel, ”C How to Program”, Pearson Education.
2. Cormen,Leiserson, Rivest, Stein, “ Introduction to Algorithms”, McGraw Hill Publishers, 2002
3. Kernigan Brian W., and Dennis M. Ritchie, “ The C Programming Language”, Second Edition, Prentice Hall, 1988.