B.B.A.(C.A) Semester I

Subject Code : - 107

Subject Name -: Principles of Programming and Algorithms

Total Contact Hours: -30

Total Credits: - 2

Pre requisite: Basic Mathematics.

Objectives: To develop Analytical / Logical thinking and Problem solving capabilities Credit Distribution: - 1 credit for theory (15 Lectures) and 1credit for Practical's. Note: - **Practical of PPA is on Computer fundamental and Scratch Programming.**

Unit	Contents	Lectures
NO.	Alequidum	6
1	Algorium	0
	1.1 Concept: Problem Algorithm	
	1.2 Characteristics of an algorithm.	
	1.3 Examples	
	1.3.1 Addition / Multiplication of integers	
	1.3.2 Determining if a number is +ve / -ve , even / odd	
	1.3.3 Maximum of 2 numbers, 3 numbers	
	1.3.4 Sum of first n numbers, sum of given n numbers,	
	Sum of digits of a given number, sum of first and last	
	digit of a Number.	
	1.3.5 Digit reversing, Table generation for number n,	
	racional of a number, Finne number, Factors of a number.	
	Armstrong number, GCD And I CM of 2 numbers	
	Autorig number, Geb And Lew of 2 numbers.	
2	Flowchart	3
	2.1 Introduction	
	2.2 Symbols	
	2.3 Draw flowcharts for algorithms implemented in chapter 1.	
3	Function	2
	3.1 Definition, Syntax.	
	3.2 Introduction to Library functions : such as pow(),sqrt() etc	
	3.3.1 Eactorial of a number	
	3.3.2 Sum of digits of a given number	
4	Array	4
	4.1 Introduction	
	4.2 Algorithms and Flowcharts using array	
	4.2.1. Maximum and minimum element from an array	
	4.2.2. Reversing elements of an array	
	4.2.3. Mean and Median of n numbers	
	4.2.4 Row major and Column major representation of	
	an array	
	4.2.5. Sum of elements of an array	
	4.2.6. Matrices: Addition, Multiplication, Transpose,	
	Symmetry, upper/lower triangular	

References:

Sr.	Title of the Book	Author/s	Publication
No.			
1	How to solve it by Computer	R. G. Dromy	Pearson
2	Fundamentals of Data	Horowitz and Sahani	Universities Press
	Structures		
3	Introduction to algorithms	Cormen, Leiserson,	MIT Press
		Rivest, Stein	