M.sc.IT – Semester IV

Paper No :- 14 Advanced Data Structures & Algorithms (Using C++)

Paper Code : 3603

Time : 2 Hours Oct - 2015 Marks: 70

Q - 1 Answer the following questions

A Write a brief note on : Threaded Binary Tree. 07

B Explain tree traversal with suitable example. 07

OR

A Convert the following equations in Prefix and Postfix. 07

(1) (a + b) + c * d + (e + (f- g))

(2) (a – b/ c) + (e + f * g)

B Write a brief note on : Binary Tree. 07

Q - 2 Answer the following questions

A Write an algorithm to delete an element from a Binary Search Tree. 07

B Briefly explain: B+ Tree. 07

OR

A Write an algorithm to search an element into binary search tree and insert an element from binary search tree. 07

B Explain Multiway Search Tree – representation and Traversing. 07

Q - 3 Answer the following questions

A Consider the following elements and write iterations of Quick Sort. 07

95, 12, 82, 88, 23, 94, 77, 10, 55, 65

B Write an algorithm to implement Merge Sort using Divide and Conquer Technique. 07

OR

A Explain Divide and Conquer Technique and enlist the advantages of this technique. 07

B Write algorithms of Binary Search in recursive and iterative form. 07

Q - 4 Answer the following questions

A Write Prim's minimum-cost spanning tree algorithm. 07

B Explain algorithm to find the shortest path. 07

OR

A Write an algorithm to Find Minimum and Maximum value from the available elements of an array. 07

B Solve the following problem through a Fractional Knapsack Method 07

Cost	14	18	15	16	23	19
Weight	5	6	3	8	9	11

Q - 5	Answer the following questions	
A	Write an algorithm to solve 8 Queens Problem.	07
B	Briefly explain Backtracking with suitable example	07
	OR	
A	Solve the following example through Sum of Subset method where the Sum of the elements is 26. A = {4,5, 6, 7, 9, 13, 16, 18}	07
B	What is General Greedy Method? Explain its real time importance with suitable examples	07