

23/6/2006

(3 Hours)

[Total Marks : 100

- N.B. :** (1) Question No.1 is compulsory.
 (2) Attempt any four questions out of remaining six questions.
 (3) Assume suitable data wherever required.

- 1.a) Write a program to print the leaf nodes of a Binary Tree . 10
 b) Write a program in C that will create a data file containing a list of Telephone Numbers in the following format: 10

Name	Contact No.
Abc	2579120
Xyz	5589623

The program should access the file & implement the following:

- 1) Search for the telephone number of the specified person.
- 2) Update the telephone number of the specified person.

- 2.a) Write a program to implement 'Interpolation Search' 8
 b) Write a program to implement Doubly Linked List & perform following Operations on it: 12
- 1) Insert an item.
 - 2) Delete an item.
 - 3) Search for an item in the list.

- 3.a) Provide equivalent 'Huffman Code' for the following: 6

Char	a	b	c	d	e	f
Frequency	45	13	12	16	9	5

- b) Explain various Collision Handling techniques 8
 c) Explain the concept of a 'Multiway Search Tree'. 6
- 4.a) Write a program to give different types of 'Tree Traversal' techniques. Explain each with an Example. 12
 b) Explain the concept of 'Complexity of an Algorithm' with example. 8
- 5.a) Compare between 'Greedy Method' & Back-Tracking' method of programming. Provide an example of each. 8
 b) Write a program to solve N-Queen problem. Explain whether a 3-queen problem is solvable. 12
- 6.a) Explain the working of Heap Sort, with following example. Also give Best, Average, & Worst case analysis of 'Heap Sort'
 5, 2, 10, 4, 3, 2, 9, 7, 8, 6 12
- b) Write a program to give Array representation of a graph. 8

7. Write Short notes on (Any Four)

20

- a) Divide & Conquer Method.
- b) Graph Traversal techniques.
- c) Circular queues.
- d) Indexed sequential search.
- e) 'Macro' in C.