

# Sample Paper

1. Merge M sorted lists of variable length

Topic: HEAP

Difficulty: 5

2. A. Given the following items to insert into a hash table that uses linear hashing, show the hash table during and after all items have been inserted. (That is, rather than erasing when things change, cross them out as they change so that I can still see them.) The items are to be inserted starting from the top of the list and working down. The collision resolution strategy is separate chaining.

Topic: HASHING

Difficulty: 3

3. C++ Program to Implement Johnsons Algorithm

Topic: GRAPH

Difficulty: 3

4. What are the tasks performed during inorder traversal?

Topic: BST

Difficulty: 5

5. Time complexity of 0/1 knapsack problem where n and w represents the number of items and capacity of knapsack respectively

Topic: DP

Difficulty: 2

6. Write sequence in which nodes of the graph (Fig. 5) have been traversed using DFS and BFS, starting at vertex . To make a unique solution, assume that whenever you faced with a decision of which node to pick from a set of nodes, pick the node whose label occurs earliest in the alphabet.

Topic: GRAPHS

Difficulty: 3

7. Find all binary strings that can be formed from a wildcard pattern

Topic: BACKTRACKING

Difficulty: 5

8. Program for Check whether two strings are anagram of each other

Topic: STRING

Difficulty: 9

9. Write the pseudo code for selection sort

Topic: SORTING

Difficulty: 7

10. Solve the following recurrence relation using Masters theorem-  $T(n) =$

$2T(n/2) + \log n$

Topic: COMPLEXITY

Difficulty: 5