DS 2

* Required

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For an un-directed graph with n vertices and e edges, the sum of the degree of each vertex is equal to 1 point

- A) 2n
- B) (2n-1)/2
- C) 2e
- D) e2/2

The number of leaf nodes in a complete binary tree of depth d is 1 point

- A) 2d
- B) 2d−1+1
- C) 2d+1+1
- D) 2d+1

Merging 4 sorted files containing 50, 10, 25 and 15 records will take____time 1 point

- A) O (100)
- B) O (200)
- C) O (175)
- D) O (125)

You have to sort a list L consisting of a sorted list followed by a few “random” elements.Which of the following sorting methods would be especially suitable for such a task? 1 point

- A) Bubble sort
- B) Selection sort
- C) Quick sort
- D) Insertion sort

What is the following code segment doing? void fn( ){ char c; cin.get(c); if (c != ‘\n’) { fn( ); cout.put(c); } } 1 point

- A) The string entered is printed as it is
- B) The string entered is printed in reverse order
- C) It will go in an infinite loop
- D) It will print an empty line

A mathematical-model with a collection of operations defined on that model is called 1 point

- A) Data Structure
- B) Abstract Data Type
- C) Primitive Data Type
- D) Algorithm

If a node in a Binary Search Tree has two children, then its in-order predecessor has 1 point

- A) No right child
- B) No left child
- C) Two children
- D) One child

A technique for direct search is 1 point

- A) Binary Search
- B) Linear Search
- C) Tree Search
- D) Hashing

If a node having two children is deleted from a binary tree, it is replaced by its 1 point

- A) Inorder predecessor
- B) Inorder successor
- C) Preorder predecessor
- D) Post order

If h is any hashing function and is used to hash n keys in to a table of size m, where n<=m, the expected number of collisions involving a particular key x is 1 point

- A) less than 1
- B) less than n
- C) less than m
- D) less than n/2

The complexity of multiplying two matrices of order m*n and n*p is 1 point

- A) mnp
- B) mp
- C) mn
- D) np

The process of accessing data stored in a tape is similar to manipulating data on a 1 point

- A) Stack
- B) Queue
- C) List
- D) Heap

Linked lists are not suitable for which of the following problems? 1 point

- A) Insertion sort
- B) Binary search
- C) Radix sort
- D) Polynomial manipulation

The number of interchanges required to sort 5, 1, 6, 2 4 in ascending order using Bubble Sort is 1 point

- A) 6
- B) 5
- C) 7
- D) 8

A full binary tree with 2n+1 nodes contain 1 point

- A) n leaf nodes
- B) n non-leaf nodes
- C) n-1 leaf nodes
- D) n-1 non-leaf nodes

B Trees are generally 1 point

- A) very deep and narrow
- B) very wide and shallow
- C) very deep and very wide
- D) cannot say

In worst case Quick Sort has order 1 point

- A) O (n log n)
- B) O (n2/2)
- C) O (log n)
- D) O (n2/4)

The searching technique that takes O (1) time to find a data is 1 point

- A) Linear Search
- B) Binary Search
- C) Hashing
- D) Tree Search

Which of the following algorithm design technique is used in the quick sort algorithm? 1 point

- A) Dynamic programming
- B) Backtracking
- C) Divide and conquer
- D) Greedy method

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