

# DS 1

\* Required

Email address \*

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Any node is the path from the root to the node is called

1 point

- ☐ A Ancestor node
- ☐ B Successor node
- ☐ C Internal nodee
- ☐ D None of the abov

Which one of the following permutations can be obtained the output using stack assuming that the input is the sequence 1,2,3,4,5 in that order ?

1 point

- ☐ 3,4,5,2,1
- ☐ B 3,4,5,1,2
- ☐ C 5,4,3,1,2
- ☐ D 1,5,2,3,4



When determining the efficiency of algorithm, the space factor is measured by

1 point

- ☐ A Counting the maximum memory needed by the algorithm
- ☐ B Counting the minimum memory needed by the algorithm
- ☐ C Counting the average memory needed by the algorithm
- ☐ D Counting the maximum disk space needed by the algorithm

In linear search algorithm the Worst case occurs when

1 point

- ☐ A The item is somewhere in the middle of the array
- ☐ B The item is not in the array at all
- ☐ C The item is the last element in the array
- ☐ D The item is the last element in the array or is not there at all

\_\_\_\_\_ is not the component of data structure

1 point

- ☐ A Operations
- ☐ B Algorithms
- ☐ C Storage Structures
- ☐ D None of above

The elements of an array are stored successively in memory cells because

1 point

- ☐ A by this way computer can keep track only the address of the first element and the addresses of other elements can be calculated
- ☐ B the architecture of computer memory does not allow arrays to store other than serially
- ☐ C both of above
- ☐ D none of above



Which of the following is not the part of ADT description?

1 point

- ☐ A Data
- ☐ B Operations
- ☐ C Both of the above
- ☐ D None of the above

Which of the following statement is true ?

1 point

- ☐ A Breath first search cannot be used to find converted components of a graph.
- ☐ B Optimal binary search tree construction can be performed efficiently using dynamic programming.
- ☐ C Given the prefix and post fix walks over a binary tree. The binary tree cannot be uniquely constructe
- ☐ D Depth first search can be used to find connected components of a graph.

Linked list are not suitable data structure of which one of the following problems ?

1 point

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

When new data are to be inserted into a data structure, but there is no available space; this situation is usually called

1 point

- ☐ A underflow
- ☐ B overflow
- ☐ C housefull
- ☐ D saturated



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

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

Submission ID (skip this field) \*

⚠ DO NOT EDIT this field or your responds may not be fully recorded.

Your answer

When inorder traversing a tree resulted E A C K F H D B G; the preorder traversal would return 1 point

- ☐ A FAEKDCBHG
- ☐ B FAEKCDHGB
- ☐ C EAFKHDCBG
- ☐ D FEAKDCHBG

A \_\_\_\_\_ is a data structure that organizes data similar to a line in the supermarket, where the first one in line is the first one out. 1 point

- ☐ A Stacks linked list
- ☐ B Queue linked list
- ☐ C Both of them
- ☐ D Neither of them



Which of the following data structure cant store the non-homogeneous data elements?

1 point

- ☐ A Arrays
- ☐ B Records
- ☐ C Pointers
- ☐ D None

A variable P is called pointer if

1 point

- ☐ A P contains the address of an element in DATA.
- ☐ B P points to the address of first element in DATA
- ☐ C P can store only memory addresses
- ☐ D P contain the DATA and the address of DATA

Which of the following is true about the characteristics of abstract data types? i) It exports a type. ii) It exports a set of operations

1 point

- ☐ A True, False
- ☐ B False, True
- ☐ C True, True
- ☐ D False, False

Which if the following is/are the levels of implementation of data structure

1 point

- ☐ A Application level
- ☐ B Abstract level
- ☐ C Implementation level
- ☐ D All of the above



The number of swapping needed to sort numbers 8,22,7,9,31,19,5,13 in ascending order using bubble sort is ?

1 point

- ☐ 11
- ☐ B 12
- ☐ C 13
- ☐ D 14

Given two sorted lists of size m and n respectively. The number of comparisons needed in the worst case by the merge sort algorithm will be?

1 point

- ☐ A mn
- ☐ B  $\max(m,n)$
- ☐ C  $\min(m,n)$
- ☐ D  $m+n-1$

The initial configuration of the queue is a,b,c,d (a is the front end). To get the configuration d,c,b,a one needs a minimum of ?

1 point

- ☐ 3 additions and 2 deletions
- ☐ B 2 deletions and 3 additions
- ☐ C 3 deletions and 4 additions
- ☐ D 3 deletions and 3 additions



A binary search tree whose left subtree and right subtree differ in height by at most 1 unit is called

1 point

- ☐ A AVL tree
- ☐ B Red-black tree
- ☐ C Lemma tree
- ☐ D None of the above

When determining the efficiency of algorithm the time factor is measured by

1 point

- ☐ A Counting microseconds
- ☐ B Counting the number of key operations
- ☐ C Counting the number of statements
- ☐ D Counting the kilobytes of algorithm

The complexity of Binary search algorithm is

1 point

- ☐ A  $O(n)$
- ☐ B  $O(\log n)$
- ☐ C  $O(n^2)$
- ☐ D  $O(n \log n)$

Linked lists are best suited

1 point

- ☐ A for relatively permanent collections of data
- ☐ B for the size of the structure and the data in the structure are constantly changing
- ☐ C for both of above situation
- ☐ D for none of above situation



Is a pile in which items are added at one end and removed from the other.

1 point

- ☐ A Queue
- ☐ B Stack
- ☐ C List
- ☐ D None of the above

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