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Question 2

Not yet answered

Marked out of 1.00

A list of 8 string, each of length n , is sorted into lexicographic order using the merge-sort algorithm. The worst case running time of this computation is

- ☐ a. 24
- ☒ b. 192
- ☐ c. 65
- ☐ d. 68

[CLEAR MY CHOICE](#)**Question 3**

Answer saved

Marked out of 1.00

Heap is defined to be a

- ☐ a. tree structure
- ☐ b. binary tree
- ☐ c. binary search tree
- ☒ d. complete binary tree

[CLEAR MY CHOICE](#)**Question 4**

Answer saved

Marked out of 1.00

In a Max heap the largest key is at

- ☐ a. a node
- ☒ b. the root
- ☐ c. a leaf
- ☐ d. a right node

[CLEAR MY CHOICE](#)

Question 5

Answer saved

Marked out of 1.00

In quick sort, the number of partitions into which the file of size n is divided by a selected record is

- ☒ a. 2
- ☐ b. $n - 1$
- ☐ c. n
- ☐ d. none of the above

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Question 6

Answer saved

Marked out of 1.00

Quick sort efficiency can be improved by adopting

- ☐ a. tree search method
- ☒ b. non-recursive method
- ☐ c. insertion method
- ☐ d. All of the above

[CLEAR MY CHOICE](#)**Question 7**

Answer saved

Marked out of 1.00

Selection sort and quick sort both fall into the same category of sorting algorithms. What is this category?

- ☐ a. Interchange sorts
- ☒ b. Divide-and-conquer sorts
- ☐ c. Average time is quadratic
- ☐ d. $O(n \log n)$ sorts

[CLEAR MY CHOICE](#)**Question 8**

Answer saved

Marked out of 1.00

The algorithm like Quick sort does not require extra memory for carrying out the sorting procedure. This technique is called _____.

- ☐ a. stable
- ☒ b. In place
- ☐ c. unstable
- ☐ d. in-partition

[CLEAR MY CHOICE](#)

Question 9

Answer saved

Marked out of 1.00

The concept of order Big O is important because

- ☐ a. middleware.
- ☐ b. It is the lower bound of the growth rate of algorithm
- ☐ c. It determines the maximum size of a problem that can be solved in a given amount of time
- ☒ d. It can be used to decide the best algorithm that solves a given problem

[CLEAR MY CHOICE](#)

Question 10

Answer saved

Marked out of 1.00

The recurrence relation capturing the optimal execution time of the Towers of Hanoi problem with n discs is

- ☐ a. $T_n = 2T(n-2) + 2$
- ☐ b. $T_n = 2T(n-1) + n$
- ☒ c. $T_n = 2T(n-1) + 1$
- ☐ d. $T_n = 2T(n/2) + 1$

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Question 11

Answer saved

Marked out of 1.00

The running time of insertion sort is

- ☒ a. $O(n^2)$
- ☐ b. $O(\text{👉})$
- ☐ c. $O(\log n)$
- ☐ d. $O(n \log n)$

[CLEAR MY CHOICE](#)**Question 12**

Answer saved

Marked out of 1.00

the time complexity of the Recurrence relation $T(\text{👉}) = 2T(n/2) + O(\text{👉})$ is

- ☒ a. $O(\text{👉})$
- ☐ b. $O(n^2)$
- ☐ c. $O(\log \log \log n)$
- ☐ d. None of the above

[CLEAR MY CHOICE](#)**Question 13**

Answer saved

Marked out of 1.00

the time complexity of the Recurrence relation $T(\text{👉}) = T(n-1) + O(\text{👉})$ is

- ☐ a. $O(n^2)$
- ☒ b. $O(\text{👉})$
- ☐ c. $O(n \log n)$
- ☐ d. All of the above

[CLEAR MY CHOICE](#)

Question 14

Answer saved

Marked out of 1.00

The time factor when determining the efficiency of algorithm is measured by

- ☐ a. Counting the kilobytes of algorithm
- ☐ b. Counting microseconds
- ☐ c. Counting the number of statements
- ☒ d. Counting the number of key operations

[CLEAR MY CHOICE](#)

Question 15

Answer saved

Marked out of 1.00

The worst-case time complexity of Bubble Sort is _____.

- ☐ a. $O(n \log n)$
- ☒ b. $O(n^2)$
- ☐ c. $O(n^3)$
- ☐ d. $O(\log n)$

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Answer saved

Marked out of 1.00

The worst-case time complexity of Merge Sort is_____.

- ☐ a. $O(\log \log n)$
- ☐ b. $O(\log n)$
- ☐ c. O 🗑️
- ☒ d. $O(n \log n)$

[CLEAR MY CHOICE](#)**Question 17**

Answer saved

Marked out of 1.00

The worst-case time complexity of Quick Sort is_____.

- ☐ a. O 🗑️
- ☒ b. $O(n^2)$
- ☐ c. $O(n \log n)$
- ☐ d. None of the Above

[CLEAR MY CHOICE](#)**Question 18**

Answer saved

Marked out of 1.00

Quick sort efficiency can be improved by adopting

- ☐ a. tree search method
- ☒ b. non-recursive method
- ☐ c. insertion method
- ☐ d. All of the above

[CLEAR MY CHOICE](#)

Question 19

Answer saved

Marked out of 1.00

Selection sort and quick sort both fall into the same category of sorting algorithms. What is this category?

- ☒ a. Interchange sorts
- ☐ b. Divide-and-conquer sorts
- ☐ c. Average time is quadratic
- ☐ d. $O(n \log n)$ sorts

[CLEAR MY CHOICE](#)

Question 20

Answer saved

Marked out of 1.00

Stack is also called as

- ☒ a. Last in first out
- ☐ b. First in last out
- ☐ c. Last in last out
- ☐ d. First in first out

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Question 21

Answer saved

Marked out of 1.00

The algorithm like Quick sort does not require extra memory for carrying out the sorting procedure. This technique is called _____.

- ☐ a. stable
- ☒ b. In place
- ☐ c. unstable
- ☐ d. in-partition

[CLEAR MY CHOICE](#)**Question 22**

Answer saved

Marked out of 1.00

The disadvantage in using a circular linked list is.

- ☒ a. It is possible to get into infinite loop.
- ☐ b. Last node points to first node.
- ☐ c. Time consuming
- ☐ d. Requires more memory space

[CLEAR MY CHOICE](#)**Question 23**

Answer saved

Marked out of 1.00

The recurrence relation capturing the optimal execution time of the Towers of Hanoi problem with n discs is

- ☐ a. $T_n = 2T(n-2) + 2$
- ☐ b. $T_n = 2T(n-1) + n$
- ☒ c. $T_n = 2T(n-1) + 1$
- ☐ d. $T_n = 2T(n/2) + 1$

[CLEAR MY CHOICE](#)

Question 24

Answer saved

Marked out of 1.00

The running time of insertion sort is

- ☒ a. $O(n^2)$
- ☐ b. $O(\text{👎})$
- ☐ c. $O(\log n)$
- ☐ d. $O(n \log n)$

[CLEAR MY CHOICE](#)

Question 25

Answer saved

Marked out of 1.00

the time complexity of the Recurrence relation $T(\text{👎}) = 2T(n/2) + O(\text{👎})$ is

- ☒ a. $O(\text{👎})$
- ☐ b. $O(n^2)$
- ☐ c. $O(\log \log \log n)$
- ☐ d. None of the above

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Question 26

Answer saved

Marked out of 1.00

The time complexity of quick sort is

- ☐ a. O 🗨️
- ☐ b. $O(n^2)$
- ☒ c. $O(n \log n)$
- ☐ d. $O(\log n)$

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