

Quick sort algorithm divide the entire array into ----- sub arrays.

Select the correct option



One



Two



Three



Four

In max-heap, largest element is stored at root node. Where is the smallest element stored?

Select the correct option



Right Node



Leaf Node



Middle Node



Left Node



In average-case time analysis of Quick sort algorithm, the most balanced case for partition is when we divide the list of elements into _____

Select the correct option



Equal no. of pieces as of input elements



Single piece exactly



Two nearly equal pieces



Three nearly equal pieces



Which of the following is calculated with Big O notation?

Select the correct option



Medium bounds



Upper bounds



Lower bounds



Both upper and lower bounds

Edit distance algorithm based on ----- strategy.

Select the correct option



Greedy



Dynamic Programming



Divide and Conquer



Searching



In Heapsort Algorithm, total time taken by heapify procedure is:

Select the correct option



$O(\log n)$



$O(\log^2 n)$



$O(n \log n)$



$O(n^2 \log n)$

Al-Khwarizmi was a/an.....

Select the correct option



Artist



Mathematician



Astronomer



Khalifah

When matrix A of 5×3 is multiply with matrix B of 3×4 then the number of multiplication required is:

Select the correct option



15



12



36



60

If Matrix-A has dimensions "3x2" and Matrix-B has dimensions "2x3", then multiplication of Matrix-A and Matrix-B will result a new Matrix-C having dimensions

Select the correct option



3x2



2x3



2x2



3x3

Pseudo code of algorithms are to be read by _____.

Select the correct option



People



RAM



Computer



Compiler

The sieve technique is a special case, where the number of sub-problems is just _____

Select the correct option



1



2



3



4

When a recursive algorithm revisits the same problem over and over again, we say that the optimization problem has _____ sub-problems.

Select the correct option



non overlapping

//



Overlapping

//



Over costing

//



Optimized

//

Sieve technique is very important special case of Divide-and-Conquer strategy.

Select the correct option



True



False

In order to say anything meaningful about our algorithms, it will be important for us to settle on a _____.

Select the correct option



Java Program



C++ Program



Pseudo program



Mathematical model of computation



Merge sort is based on _____

Select the correct option



Brute-force



Plan-sweep



Axis-sweep



Divide and Conquer



What time does Merge Sort algorithm take in order to sort an array of 'n' numbers?

Select the correct option



$\Theta(n)$



$\Theta(\log n)$



$\Theta(n^2)$



$\Theta(n \log n)$

Median is not useful measure of central tendency of given input set especially when the distribution of values is highly skewed.

Select the correct option



True



False

In Heap Sort algorithm, the first step is to _____

Select the correct option



Call Build-Heap procedure

//



Sort the array in descending order

//



Call Heapify procedure

//



Find the number of input elements

//

The definition of Theta-notation relies on proving _____ asymptotic bound.

Select the correct option



One



Lower



Upper



Both lower & upper



In merge sort algorithm, to merge two lists of size $n/2$ to a list of size n , takes _____ time.

Select the correct option



Theta (n)



Theta $\log(n)$



Theta $\log_2(n)$



Theta $n\log(n)$

Quick sort algorithm was developed by _____

Select the correct option



Alfred Aho



Sedgewick



John Vincent Atanasoff



Tony Hoare

We can make _____ recursive calls in Fibonacci Sequence.

Select the correct option



Infinite



Finite

The sequence of merge sort algorithm is:

Select the correct option



Divide-Combine-Conquer



Conquer-Divide-Combine



Divide-Conquer-Combine



Combine-Divide-Conquer



In _____ Knapsack Problem, limitation is that an item can either be put in the bag or not. Fractional items are not allowed.

Select the correct option



0



1



0/1



Fractional

In Selection algorithm, we assume pivot selection takes theta _____ running time.

Select the correct option



n



n^2



n^3



$\log(n)$

In Heap Sort algorithm (using max heap), when every time maximum element is removed from top _____

Select the correct option



We call merge Sort algorithm



It becomes Order n^2 Algorithm



Divide and Conquer strategy helps us



We are left with a hole



If matrix A of dimension $p \times q$ is multiply with matrix B of dimension $q \times r$, then each entry in resultant matrix takes ----- time.

Select the correct option



$O(q)$



$O(1)$



$O(p \times q)$



$O(q \times r)$

Time complexity of Dynamic Programming based algorithm for computing the minimum cost of Chain Matrix Multiplication is _____

Select the correct option



$\log n$



n



n^2 (n square)



n^3 (n cube)

_____ is a method of solving a problem in which we check all possible solutions to the problem to find the solution we need.

Select the correct option

- | | | |
|-----------------------|-----------------------|----|
| <input type="radio"/> | Plane-Sweep Algorithm | // |
| <input type="radio"/> | Sorting Algorithm | // |
| <input type="radio"/> | Brute-Force Algorithm | // |
| <input type="radio"/> | Greedy approach | // |

The worst case running time of Quick sort algorithm _____

Select the correct option



Cannot be quadratic



Is quadratic



Is always Exponential



Is linear

