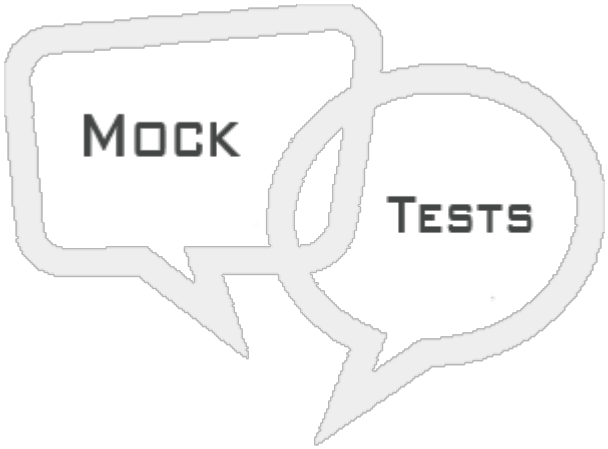
DATA STRUCTURES ALGORITHMS MOCK TEST

This section presents you various set of Mock Tests related to **Data Structures Algorithms**. You can download these sample mock tests at your local machine and solve offline at your convenience. Every mock test is supplied with a mock test key to let you verify the final score and grade yourself.



DATA STRUCTURES ALGORITHMS MOCK TEST III

Q 1 - What will be the running-time of Dijkstra's single source shortest path algorithm, if the graph GV, E is stored in form of adjacency list and binary heap is used −

A - O($|V|^2$)

B - O$|V|log|V|$

C - O$|E| + |V|log|V|$

D - None of these

Q 2 - How many swaps are required to sort the given array using bubble sort - { 2, 5, 1, 3, 4}

A - 4

B - 5

C - 6

D - 7

Q 3 - Match the following −

(**1**) Bubble Sort	(**A**) On
(**2**) Shell Sort	(**B**) O(n^2)
(**3**) Selection Sort	(**C**) O$nlogn$

A - 1 → A, 2 → B, 3 → C

B - 1 → B, 2 → C, 3 → A

C - 1 → A, 2 → C, 3 → B

D - 1 → B, 2 → A, 3 → C

Q 4 - In context with time-complexity, find the odd out −

A - Deletion from Linked List.

B - Searching in Hash Table

C - Adding edge in Adjacency Matrix

D - Heapify a Binary Heap

Q 5 - In binary heap, whenever the root is removed then the rightmost element of last level is replaced by the root. Why?

A - It is the easiest possible way.

B - To make sure that it is still complete binary tree.

C - Because left and right subtree might be missing.

D - None of the above!

Q 6 - Time required to merge two sorted lists of size m and n, is

A - O$m|n$

B - O$m+n$

C - O$mlogn$

D - O$nlogm$

Q 7 - The number of binary trees with 3 nodes which when traversed in post order gives the sequence A,B,C is ?

A - 3

B - 4

C - 5

D - 6

Q 8 - Quick sort running time depends on the selection of

A - size of array

B - pivot element

C - sequence of values

D - none of the above!

Q 9 - Which of the below given sorting techniques has highest best-case runtime complexity −

A - quick sort

B - selection sort

C - insertion sort

D - bubble sort

Q 10 - Which of the below mentioned sorting algorithms are not stable?

A - Selection Sort

B - Bubble Sort

C - Merge Sort

D - Insertion Sort

Q 11 - If queue is implemented using arrays, what would be the worst run time complexity of queue and dequeue operations?

A - On, On

B - On, O1

C - O1, On

D - O1, O1

Q 12 - A queue data-structure can be used for −

A - expression parsing

B - recursion

C - resource allocation

D - all of the above

Q 13 - The Θ notation in asymptotic evaluation represents −

B - Base case

C - Average case

D - Worst case

A - NULL case

Q 14 - Which of these alogrithmic approach tries to achieve localized optimum solution −

A - Greedy approach

B - Divide and conquer approach

C - Dynamic approach

D - All of the above

Q 15 - Which of the following uses memoization?

A - Greedy approach

B - Divide and conquer approach

C - Dynamic programming approach

D - None of the above!

Q 16 - Index of arrays in C programming langauge starts from

A - 0

B - 1

C - either 0 or 1

D - undefined

Q 17 - In doubly linked lists

A - a pointer is maintained to store both next and previous nodes.

B - two pointers are maintained to store next and previous nodes.

C - a pointer to self is maintained for each node.

D - none of the above.

Q 18 - `node.next -> node.next.next;` **will make**

A - node.next inaccessible

B - node.next.next inaccessible

C - this node inaccessible

D - none of the above

Q 19 - Linked list search complexity is

A - $O1$

B - On

C - $Ologn$

D - $Ologlogn$

Q 20 - Which of the following is not possible with an array in C programming langauge −

A - Declaration

B - Definition

C - Dynamic Allocation

D - Array of strings

Q 21 - In C programming, when we remove an item from bottom of the stack, then −

A - The stack will fall down.

B - Stack will rearranged items.

C - It will convert to LIFO

D - This operation is not allowed.

Q 22 - Program with highest run-time complexity is

A - Tower of Hanoi

B - Fibonacci Series

C - Prime Number Series

D - None of the above

Q 23 - Tower of hanoi is a classic example of

A - divide and conquer

B - recursive approach

C - B but not A

D - Both A & B

Q 24 - Which of the following algorithm cannot be desiged without recursion −

A - Tower of Hanoi

B - Fibonacci Series

C - Tree Traversal

D - None of the above

Q 25 - If there's no base criteria in a recursive program, the program will

A - not be executed.

B - execute until all conditions match.

C - execute infinitely.

D - obtain progressive approach.

ANSWER SHEET

Question Number	Answer Key
1	C
2	A
3	B
4	D
5	B
6	B
7	C
8	B
9	B
10	A
11	D
12	C
13	B
14	A
15	C
16	A
17	B
18	A
19	B
20	C
21	D
22	A
23	D
24	D
25	C