This section presents you various sets 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 II

**Q 1 - Quick sort algorithm is an example of**

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<table>
<thead>
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<tbody>
<tr>
<td>A</td>
<td>Greedy approach</td>
</tr>
<tr>
<td>B</td>
<td>Improved binary search</td>
</tr>
<tr>
<td>C</td>
<td>Dynamic Programming</td>
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<tr>
<td>D</td>
<td>Divide and conquer</td>
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**Q 2 - Which of the following asymptotic notation is the worst among all?**

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>A</td>
<td>$O(n + 9378)$</td>
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<tr>
<td>B</td>
<td>$O(n^3)$</td>
</tr>
<tr>
<td>C</td>
<td>$n^{O1}$</td>
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<tr>
<td>D</td>
<td>$2^{O_n}$</td>
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**Q 3 - The following formula is of**

$$\text{left_subtree (keys)} \leq \text{node (key)} \leq \text{right_subtree (keys)}$$

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>A</td>
<td>Binary Tree</td>
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<tr>
<td>B</td>
<td>Complete Binary Tree</td>
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<tr>
<td>C</td>
<td>Binary Search Tree</td>
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<tr>
<td>D</td>
<td>All of the above</td>
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Q 4 - Travelling salesman problem is an example of
A - Dynamic Algorithm
B - Greedy Algorithm
C - Recursive Approach
D - Divide & Conquer

Q 5 - Find the odd out
A - Prim's Minimal Spanning Tree Algorithm
B - Kruskal's Minimal Spanning Tree Algorithm
C - Floyd-Warshall's All pair shortest path Algorithm
D - Dijkstra's Minimal Spanning Tree Algorithm

Q 6 - Which of the following searching techniques do not require the data to be in sorted form
A - Binary Search
B - Interpolation Search
C - Linear Search
D - All of the above

Q 7 - Minimum number of spanning tree in a connected graph is
A - n
B - n^n - 1
C - 1
D - 0

Q 8 - Visiting root node after visiting left and right sub-trees is called
A - In-order Traversal
B - Pre-order Traversal
C - Post-order Traversal

Q 9 - Binary search tree has best case run-time complexity of \(O\log n\). What could the worst case?
A - \(O(n)\)
B - \(O(n^2)\)
C - \(O(n^3)\)
Q 10 - The minimum number of edges required to create a cyclid graph of n vertices is
A - n
B - n - 1
C - n + 1
D - 2n

Q 11 - Maximum degree of any vertex in a simple graph of vertices n is
A - 2n - 1
B - n
C - n + 1
D - n - 1

Q 12 - What could be the worst case height of an AVL tree?
A - 0.97 log n
B - 2.13 log n
C - 1.44 log n
D - n^2 log n

Q 13 - What is not true about insertion sort?
A - Exhibits the worst case performance when the initial array is sorted in reverse order.
B - Worst case and average case performance is O(n^2)
C - Can be compared to the way a card player arranges his card from a card deck.
D - None of the above!

Q 14 - Which of the following algorithm is not stable?
A - Bubble Sort
B - Quick Sort
C - Merge Sort
D - Insertion Sort

Q 15 - If the array is already sorted, which of these algorithms will exhibit the best performance?
A - Merge Sort
Q 16 - Which of the following is example of in-place algorithm?
A - Bubble Sort
B - Merge Sort
C - Insertion Sort
D - All of the above

Q 17 - Graph traversal is different from a tree traversal, because
A - trees are not connected.
B - graphs may have loops.
C - trees have root.
D - None is true as tree is a subset of graph.

Q 18 - Which method can find if two vertices x & y have path between them?
A - Depth First Search
B - Breadth First Search
C - Both A & B
D - None A or B

Q 19 - Time complexity of Depth First Traversal of is
A - $\Theta(|V| + |E|)$
B - $\Theta(|V|)$
C - $\Theta(|E|)$
D - $\Theta(|V| \times |E|)$

Q 20 - An algorithm is
A - a piece of code to be executed.
B - a loosely written code to make final code.
C - a step by step procedure to solve problem.
D - all of the above.

Q 21 - Apriory algorithm analysis does not include –
A - Time Complexity
B - Space Complexity
C - Program Complexity
D - None of the above!

Q 22 - Which of the below given series is Non-Increasing Order –
A - 1, 3, 4, 6, 8, 9
B - 9, 8, 6, 4, 3, 1
C - 9, 8, 6, 3, 3, 1
D - 1, 3, 3, 6, 8, 9

Q 23 - Which of the following has search efficiency of O1 –
A - Tree
B - Heap
C - Hash Table
D - Linked-List

Q 24 - After each iteration in bubble sort
A - at least one element is at its sorted position.
B - one less comparison is made in the next iteration.
C - Both A & B are true.
D - Neither A or B are true.

Q 25 - What about recursion is true in comparison with iteration?
A - very expensive in terms of memory.
B - low performance.
C - every recursive program can be written with iteration too.
D - all of the above are true!

ANSWER SHEET

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Answer Key</th>
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<tr>
<td>1</td>
<td>D</td>
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