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## TAP ON THE ICONS TO JOIN!

	<b>codewitharrays.in freelance project available to buy contact on 8007592194</b>	
SR.NO	Project NAME	Technology
1	<b>Online E-Learning Platform Hub</b>	React+Springboot+MySQL
2	<b>PG Mates / RoomSharing / Flat Mates</b>	React+Springboot+MySQL
3	<b>Tour and Travel management System</b>	React+Springboot+MySQL
4	<b>Election commition of India (online Voting System)</b>	React+Springboot+MySQL
5	<b>HomeRental Booking System</b>	React+Springboot+MySQL
6	<b>Event Management System</b>	React+Springboot+MySQL
7	<b>Hotel Management System</b>	React+Springboot+MySQL
8	<b>Agriculture web Project</b>	React+Springboot+MySQL
9	<b>AirLine Reservation System / Flight booking System</b>	React+Springboot+MySQL
10	<b>E-commerce web Project</b>	React+Springboot+MySQL
11	<b>Hospital Management System</b>	React+Springboot+MySQL
12	<b>E-RTO Driving licence portal</b>	React+Springboot+MySQL
13	<b>Transpotation Services portal</b>	React+Springboot+MySQL
14	<b>Courier Services Portal / Courier Management System</b>	React+Springboot+MySQL
15	<b>Online Food Delivery Portal</b>	React+Springboot+MySQL
16	<b>Muncipal Corporation Management</b>	React+Springboot+MySQL
17	<b>Gym Management System</b>	React+Springboot+MySQL
18	<b>Bike/Car ental System Portal</b>	React+Springboot+MySQL
19	<b>CharityDonation web project</b>	React+Springboot+MySQL
20	<b>Movie Booking System</b>	React+Springboot+MySQL

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21	Job Portal web project	React+Springboot+MySql
22	LIC Insurance Portal	React+Springboot+MySql
23	Employee Management System	React+Springboot+MySql
24	Payroll Management System	React+Springboot+MySql
25	RealEstate Property Project	React+Springboot+MySql
26	Marriage Hall Booking Project	React+Springboot+MySql
27	Online Student Management portal	React+Springboot+MySql
28	Resturant management System	React+Springboot+MySql
29	Solar Management Project	React+Springboot+MySql
30	OneStepService LinkLabourContractor	React+Springboot+MySql
31	Vehical Service Center Portal	React+Springboot+MySql
32	E-wallet Banking Project	React+Springboot+MySql
33	Blogg Application Project	React+Springboot+MySql
34	Car Parking booking Project	React+Springboot+MySql
35	OLA Cab Booking Portal	React+NextJs+Springboot+MySql
36	Society management Portal	React+Springboot+MySql
37	E-College Portal	React+Springboot+MySql
38	FoodWaste Management Donate System	React+Springboot+MySql
39	Sports Ground Booking	React+Springboot+MySql
40	BloodBank mangement System	React+Springboot+MySql

Project List

41	Bus Tickit Booking Project	React+Springboot+MySQL
42	Fruite Delivery Project	React+Springboot+MySQL
43	Woodworks Bed Shop	React+Springboot+MySQL
44	Online Dairy Product sell Project	React+Springboot+MySQL
45	Online E-Pharma medicine sell Project	React+Springboot+MySQL
46	FarmerMarketplace Web Project	React+Springboot+MySQL
47	Online Cloth Store Project	React+Springboot+MySQL
48	Train Ticket Booking Project	React+Springboot+MySQL
49	Quizz Application Project	JSP+Springboot+MySQL
50	Hotel Room Booking Project	React+Springboot+MySQL
51	Online Crime Reporting Portal Project	React+Springboot+MySQL
52	Online Child Adoption Portal Project	React+Springboot+MySQL
53	online Pizza Delivery System Project	React+Springboot+MySQL
54	Online Social Complaint Portal Project	React+Springboot+MySQL
55	Electric Vehical management system Project	React+Springboot+MySQL
56	Online mess / Tiffin management System Project	React+Springboot+MySQL
57		React+Springboot+MySQL
58		React+Springboot+MySQL
59		React+Springboot+MySQL
60		React+Springboot+MySQL

## Spring Boot + React JS + MySQL Project List

Sr.No	Project Name	YouTube Link
1	Online E-Learning Hub Platform Project	<a href="https://youtu.be/KMjyBaWmgzg?si=YckHuNzs7eC84-IW">https://youtu.be/KMjyBaWmgzg?si=YckHuNzs7eC84-IW</a>
2	PG Mate / Room sharing/Flat sharing	<a href="https://youtu.be/4P9clHg3wvk?si=4uEsi0962CG6Xodp">https://youtu.be/4P9clHg3wvk?si=4uEsi0962CG6Xodp</a>
3	Tour and Travel System Project Version 1.0	<a href="https://youtu.be/-UHOBywHaP8?si=KHHfE_A0uv725f12">https://youtu.be/-UHOBywHaP8?si=KHHfE_A0uv725f12</a>
4	Marriage Hall Booking	<a href="https://youtu.be/VXz0kZQi5to?si=IiOS-QG3TpAFP5k7">https://youtu.be/VXz0kZQi5to?si=IiOS-QG3TpAFP5k7</a>
5	Ecommerce Shopping project	<a href="https://youtu.be/vJ_C6LkhrZ0?si=YhcBylSErvdn7paq">https://youtu.be/vJ_C6LkhrZ0?si=YhcBylSErvdn7paq</a>
6	Bike Rental System Project	<a href="https://youtu.be/FIzsAmIBCbk?si=7ujQTJqEgkQ8ju2H">https://youtu.be/FIzsAmIBCbk?si=7ujQTJqEgkQ8ju2H</a>
7	Multi-Restaurant management system	<a href="https://youtu.be/pvV-pM2Jf3s?si=PgvnT-yFc8ktrDxB">https://youtu.be/pvV-pM2Jf3s?si=PgvnT-yFc8ktrDxB</a>
8	Hospital management system Project	<a href="https://youtu.be/lynLouBZvY4?si=CXzQs3BsRkjKhZCw">https://youtu.be/lynLouBZvY4?si=CXzQs3BsRkjKhZCw</a>
9	Municipal Corporation system Project	<a href="https://youtu.be/cVMx9NVyl4I?si=qX0oQt-GT-LR_5iF">https://youtu.be/cVMx9NVyl4I?si=qX0oQt-GT-LR_5iF</a>
10	Tour and Travel System Project version 2.0	<a href="https://youtu.be/_4u0mB9mHXE?si=gDiAhKBowi2gNUKZ">https://youtu.be/_4u0mB9mHXE?si=gDiAhKBowi2gNUKZ</a>

Sr.No	Project Name	YouTube Link
11	Tour and Travel System Project version 3.0	<a href="https://youtu.be/Dm7nOdpasWg?si=P_Lh2gcOFhlyudug">https://youtu.be/Dm7nOdpasWg?si=P_Lh2gcOFhlyudug</a>
12	Gym Management system Project	<a href="https://youtu.be/J8_7Zrkg7ag?si=LcxV51ynfUB7OptX">https://youtu.be/J8_7Zrkg7ag?si=LcxV51ynfUB7OptX</a>
13	Online Driving License system Project	<a href="https://youtu.be/3yRzsMs8TLE?si=JRI_z4FDx4Gmt7fn">https://youtu.be/3yRzsMs8TLE?si=JRI_z4FDx4Gmt7fn</a>
14	Online Flight Booking system Project	<a href="https://youtu.be/m755rOwdk8U?si=HURvAY2VnizlyJlh">https://youtu.be/m755rOwdk8U?si=HURvAY2VnizlyJlh</a>
15	Employee management system project	<a href="https://youtu.be/ID1iE3W_GRw?si=Y_jv1xV_BljhrD0H">https://youtu.be/ID1iE3W_GRw?si=Y_jv1xV_BljhrD0H</a>
16	Online student school or college portal	<a href="https://youtu.be/4A25aEKfei0?si=RoVgZtxMk9TPdQvD">https://youtu.be/4A25aEKfei0?si=RoVgZtxMk9TPdQvD</a>
17	Online movie booking system project	<a href="https://youtu.be/Lfjv_U74SC4?si=fiDvrhhrjb4KSISm">https://youtu.be/Lfjv_U74SC4?si=fiDvrhhrjb4KSISm</a>
18	Online Pizza Delivery system project	<a href="https://youtu.be/Tp3izreZ458?si=8eWA OzA8SVdNwlyM">https://youtu.be/Tp3izreZ458?si=8eWA OzA8SVdNwlyM</a>
19	Online Crime Reporting system Project	<a href="https://youtu.be/0UlzReSk9tQ?si=6vN0e70TVY1GOwPO">https://youtu.be/0UlzReSk9tQ?si=6vN0e70TVY1GOwPO</a>
20	Online Children Adoption Project	<a href="https://youtu.be/3T5HC2HKyT4?si=bntP78niYH802i7N">https://youtu.be/3T5HC2HKyT4?si=bntP78niYH802i7N</a>

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**DSA - LAB MCQs Exam**

English ▾

**Result..**

Total Score -	35
Correct Answer -	35
Wrong Answer -	35
Total Attempt-	70
Total Not Attempt -	0

Your performance

◀ Dashboard (<https://www.parikshado.com/oldwebsite/dashboard>)

**1 of 70**

which of the given options provides the increasing order of asymptotic complexity of functions f1,f2,f3and f4 ?

- f1 (n)- $2^n$   
 f2(n) =  $n^{(3/2)}$   
 f3(n)=nLogn  
 f4(n)  $n^{\log n}$

- 1  f3,f2,f4,f1 ✓  
 2  f3,f2,f1,f4  
 3  f2,f3,f1,f4  
 4  f2,f3,,f4,f1

## Solution -

f3,f2,f4,f1

### 2 of 70

From following which is not the operation of data structure?

- 1  Operations that manipulate data in some way ✓
- 2  Operations that perform a computation
- 3  Operations that check of syntax errors
- 4  Operations that monitor an object for the occurrence of a controlling event

## Solution -

Operations that manipulate data in some way

### 3 of 70

Complete the following code if the function implements bubble sort, to sort elements in ascending order.

```
public static void bubbleSort(int arr){  
    int n=arr.length;  
    for(int i=0;i {  
        for(int j=1;j<(n-i);j++) {  
            if(arr[j-1]>arr[j]) {  
                _____ //code goes here  
            }  
        }  
    }  
}
```

- 1 int temp= arr[i];  
arr[j+1]=arr[j];  
arr[j]=temp;

int temp=arr[j-1];

arr[j-1]=arr[j];

**2**  arr[j]=temp;

int temp=arr[i-1];

arr[i-1]=arr[j];

**3**  arr[i]=temp;

int temp =arr[i-1];

arr[i-1]=arr[j];

**4**  arr[j]=temp;

## Solution -

int temp=arr[j-1];

arr[j-1]=arr[j];

arr[j]=temp;

## 4 of 70

If you want to store the name and marks of N students, which of the following is the correct choice?

**1**  An array of structures that contains names and marks as a field ✓

**2**  Astructure containing arrays of Names and arrays of Marks

**3**  An array of names and an Array of marks

**4**  All of the above

## Solution -

An array of structures that contains names and marks as a field

## 5 of 70

The time complexity of merge sort algorithm is

**1**  O(n)

- 2  O(log n)
- 3  O(n^2)
- 4  O(n log n) ✓

## Solution -

O(n log n)

### 6 of 70

What are the time complexities of finding the 8th element from the beginning and the 8th element from the end in a singly linked list? Let n be the number of nodes in a linked list, you may assume that n > 8.

- 1  O(1) and O(n) ✓
- 2  O(1) and O(1)
- 3  O(n) and O(1)
- 4  O(n) and O(n)

## Solution -

O(1) and O(n)

### 7 of 70

Which of the following algorithm design techniques is used in finding all pairs of shortest distances in a graph ?

- 1  Dynamic programming ✓
- 2  Back Tracking
- 3  Greedy

- 4  Divide & Conquer

## Solution -

Dynamic programming

### 8 of 70

If already sorted array is passed to a sorting algorithm, which one will be the slowest?

- 1  Insertion Sort ✓
- 2  Selection Sort
- 3  Heap Sort
- 4  Merge Sort
- 
- Candidate**  
**Name :**  
**PARDESHI**  
**ABHISHEK**  
**RAMESH**  
**Mobile No. :**  
**7020789856**  
**PG-DAC**  
**MARCH 2023**

## Solution -

Time Left  
00:00:00

### Question palette

### 9 of 70 16

Let ' $m$ ' and ' $n$ ' be the number of edges and vertices in a graph  $G$ , respectively.

Which of the following is the time complexity of Kruskal's algorithm to find the minimum spanning tree of  $G$ ?

- 19
- 1   $O(n \log n)$
- 20
- 2   $O(m \log m)$  ✓
- 21
- 3   $O(n?)$
- 22
- 4   $O(m?)$
- 23

24

25

## Solution -

$O(m \log m)$

### 10 of 70

Which one of the following is an application of queue data structure

- 1  When a resource is shared among multiple consumers.
- 2  When a data is transferred asynchronously
- 3  Load Balancing
- 4  All the above ✓

## Solution -

All the above

### 11 of 70

Which node pointer should be updated a new node is to be inserted in the middle of a Credes of a doubly linked list?

- 1  Next Pointer of A. Previous Pointer of B, Next Painter of C and previous pointer of C
- 2  Next Pointer of A. Previous Pointer of B, Next Pointer of B and previous pointer of C ✓
- 3  Next Pointer of A, Previous pointer of Anext pointer of B and previous pointer of C
- 4  None of the above

## Solution -

Next Pointer of A. Previous Pointer of B, Next Pointer of B and previous pointer of C

### 12 of 70

Consider the stack shown below:

12 11 34 56 5 45 4 45

Top

After performing the following operations in sequence, which value will be at the top of the stack?

Pop, pop, pop, push 29, push 30, pop, pop, pop

- 1 29
- 2 30
- 3 5
- 4 56 ✓

## Solution -

56

### 13 of 70

A complete n-ary tree is a tree in which each node has n children or no children.

Let I be the number of internal nodes and L be the number of leaves in a complete n-ary tree. If L = 41, and I = 10, what is the value of n?

- 1 6
- 2 3
- 3 4

4  5 ✓

## Solution -

5

### 14 of 70

The height of a binary tree is the maximum number of edges in any root-to-leaf path. The maximum number of nodes in a binary tree of height is \_\_\_

- 1   $2^{h-1}$
- 2   $2^{h-1}-1$
- 3   $2^{h+1}-1$  ✓
- 4   $2^{h+1}$

## Solution -

$2^{h+1}-1$

### 15 of 70

We use a dynamic programming approach when:

- 1  We need an optimal solution
- 2  The solution has an optimal substructure ✓
- 3  The given problem can be reduced to the 3-SAT problem
- 4  It's faster than Greedy

## Solution -

The solution has an optimal substructure

### 16 of 70

The value returned by Hash Function is called as:

- 1  Digest
- 2  Hash value
- 3  Hash code
- 4  All of these ✓

## Solution -

All of these

### 17 of 70

Which of the following is recursive preorder traversal function, if class node is defined as follows?

```
class Node {  
    int data;  
    Node left, right;  
    public Node(int key) {  
        data=key;  
        left=right = null;  
    }  
}
```

void preorder(Node node) {  
 if(node== null)  
 return;  
 System.out.print(node.data + \* >\*);  
 Preorder(node. Left);  
 preorder(node.right);  
}

1 ✓

- void preorder(Node node){  
    if(node!= null)  
        return;  
    System.out.print(node.data + \* >\*);  
    Preorder(node. Left);  
    preorder(node.right);  
**2**    }
- void preorder(Node node){  
    if(node!= null)  
        return;  
**3**
- none

## Solution -

```
void preorder(Node node) {  
if(node== null)  
return;  
System.out.print(node.data + * >*);  
Preorder(node. Left);  
preorder(node.right);  
}
```

### 18 of 70

Consider the following undirected graph with edge weights as shown:

at a4  
09 a2 ao  
a4 09  
at at 0.4  
as a4

The number of minimum-weight spanning trees of the graph is\_\_\_\_\_

- 1**  In adjacency list representation, space is saved for sparse graphs.
- 2**  In adjacency list representation, space is saved for sparse graphs.
- 3**  Adding a vertex in adjacency list representation is easier than adjacency matrix representation.
- 4**  All of the above ✓

## Solution -

All of the above

### 19 of 70

What is the time complexity of the following code: int a = 0, i=N;

while (i > 0)

{

a += i;

i /= 2;

}

- 1  $O(N)$
- 2  $O(\text{Sqrt}(N))$
- 3  $O(N/2)$
- 4  $O(\log N)$  ✓

## Solution -

$O(\log N)$

### 20 of 70

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

- 1  $T(n) = 2T(n-2)+2$  ✓
- 2  $T(n) = 2T(n-1)+n$
- 3  $T(n) = 2T(n/2)+1$
- 4  $T(n)=2T(n-1)+1$

## Solution -

$$T(n) = 2T(n-2)+2$$

### 21 of 70

Which of the following is FALSE about B/B+ tree

- 1  B/B+ trees grow upward while Binary Search Trees grow downward
- 2  Time complexity of search operation in B/B+ tree is better than Red Black Trees in general.
- 3  Number of child pointers in a B/B+ tree node is always equals to number of keys in it plus one.
- 4  A B/B+ tree is defined by a term minimum degree. And minimum degree depends on hard disk block size, key and address sizes.

## Solution -

Time complexity of search operation in B/B+ tree is better than Red Black Trees in general.

### 22 of 70

An ADT is defined to be a mathematical model of a user-defined type along with the collection \_\_\_\_\_ of all operations on that model.

- 1  Cardinality
- 2  Assignment
- 3  Primitive ✓
- 4  Structure

## Solution -

Primitive

### 23 of 70

Which of the following algorithm can be used to efficiently sort a linked list?

- 1  Merge Sort ✓
- 2  Quick Sort
- 3  Heap Sort
- 4  Selection Sort

## Solution -

Merge Sort

### 24 of 70

What does the following return? Public int getval ( Bnode T)

```
{ //T=root node  
int value =0;  
if(T)  
{//LC= Left child and RC right child  
If((T.LC)== NULL) && (T.RC)== NULL))  
value -1;  
else  
value= value+ getval(T.LC)+ getval(.TRC);  
}  
return value;  
}
```

- 1  Number of internal nodes in the tree
- 2  height of the tree

- 3  Number of nodes without right sibling in the tree ✓
- 4  Number of leaf nodes in the tree

## Solution -

Number of nodes without right sibling in the tree

### 25 of 70

Which of the following data structure is BEST suited to implement LRU Cache?

- 1  Array
- 2  Binary Tree
- 3  Doubly Linked List ✓
- 4  Graph

## Solution -

Doubly Linked List

### 26 of 70

The integrity of transmitted data can be verified by using:

- 1  Message Authentication Code (MAC) ✓
- 2  Timestamp comparison
- 3  Data length comparison
- 4  None of these

## Solution -

Message Authentication Code (MAC)

**27 of 70**

In Hash Table, which collision handling technique results in Secondary Clustering?

- 1  Mid-Square
- 2  Quadratic Probing ✓
- 3  Linear Probing
- 4  Folding

## Solution -

Quadratic Probing

**28 of 70**

Which of the following is the advantage of the array data structure?

- 1  Elements of mixed data types can be stored
- 2  Easier to access the elements in an array ✓
- 3  Index of the first elements starts from 1
- 4  Elements of an array cannot be sorted

## Solution -

Easier to access the elements in an array

**29 of 70**

Which one of the following is an application of Stack Data Structure?

1  Managing function calls

2  The stock span problem

3  Arithmetic expression evaluation

4  All of the above ✓

**Solution -**

All of the above

**30 of 70**

A tree node with no children is called a:

1  Leaf node ✓

2  Root node

3  Parent node

4  Ancestor node

**Solution -**

Leaf node

**31 of 70**

You are very hungry and you decide to bake a batch by following your grandmother's chocolate chip cookie recipe. Which of the following computational thinking skills required to complete the above task?

1  Abstraction

- 2 Algorithm Design ✓
- 3 Pattern Recognition
- 4 Decomposition

## Solution -

Algorithm Design

### 32 of 70

Depth First Search graph traversal method makes use of ..... data structure.

- 1 Tree
- 2 Stack ✓
- 3 Queue
- 4 Linked list

## Solution -

Stack

### 33 of 70

Create a Binary search tree for the given set of strings: MAR, MAY, NOV,AUG,APR, JAN, DEC,JULY,FEB,JUNE,OCT,SEPT What are the leaf nodes generated in the tree?

- 1 APR, FEB DEC, JULY, SEPT ✓
- 2 FEB JUNE, SEPT
- 3 can't create the tree

- 4  None of the above

## Solution -

APR, FEB DEC, JULY, SEPT

### 34 of 70

In Computational thinking terms, breaking down a complex problem into smaller, more specific sub-problems is called as\_\_\_\_\_.

- 1  Problem Identification
- 2  Decomposition ✓
- 3  Pattern Recognition
- 4  Algorithmic Thinking

## Solution -

Decomposition

### 35 of 70

Which is the safest method to choose a pivot element?

- 1  Choosing a random element as a pivot
- 2  Choosing the first element as a pivot
- 3  Choosing the last element as a pivot
- 4  Median-of-three partitioning method ✓

## Solution -

Median-of-three partitioning method

**36 of 70**

Which of the following algorithms solves the all-pair shortest path algorithm?

- 1  Prim's algorithm
- 2  Dijkstra's algorithm
- 3  Bellman-Ford algorithm
- 4  Floyd-Warshall's algorithm ✓

**Solution -**

Floyd-Warshall's algorithm

**37 of 70**

In which of the following tree do the height of the left subtree and the height of the right subtree differ at most by one?

- 1  AVL Tree ✓
- 2  Expression Tree
- 3  Threaded Binary Tree
- 4  Binary Search Tree

**Solution -**

AVL Tree

**38 of 70**

Which one of the following is the tightest upper bound that represents the time complexity of inserting an object into a binary search tree of n nodes?

- 1  $O(1)$
- 2  $O(\log n)$
- 3  $O(n)$  ✓
- 4  $O(n\log n)$

## Solution -

$O(n)$

### 39 of 70

What is the maximum height of any AVL tree with 7 nodes? Assume that the height of a tree with single node is 0.

- 1 2 ✓
- 2 3
- 3 4
- 4 5

## Solution -

2

### 40 of 70

A digraph is said to be COMPLETE, if it has N vertices and .....edges.

- 1  $N \times N$
- 2  $N - 1$
- 3  $N \times (N - 1)$  ✓

- 4  N\*(N-1)/2

## Solution -

N\*(N-1)

### 41 of 70

How many numbers of comparisons will be done in worst case using  
Binary Search the

- 1  10
- 2  2
- 3  5
- 4  4 ✓

## Solution -

4

### 42 of 70

Let  $G = (V, E)$  be a weighted undirected graph and let  $T$  be a Minimum Spanning Tree (MST) of  $G$  maintained using adjacency lists. Suppose a new weighed edge  $(u, v) \in V^*V$  is added to  $G$ . The worst-case time complexity of determining if  $T$  is still an MST of the resultant graph is

- 1   $\theta(\|E\| + |V|)$
- 2   $\theta(|E| \cdot |V|)$
- 3   $\theta(|E| \log |V|)$
- 4   $\theta(|V|)$  ✓

## Solution -

theta(|V|)

### 43 of 70

Which of the following data structure is BEST suited to implement Priority Queue?

- 1  Doubly Linked List
- 2  Heap ✓
- 3  Queue using Linked List
- 4  Array

## Solution -

Heap

### 44 of 70

Which of the following is NOT an example of balanced Binary Search Tree?

- 1  Threaded Binary Tree ✓
- 2  AVL Tree
- 3  Red-black Tree
- 4  Splay Tree

## Solution -

Threaded Binary Tree

**45 of 70**

Consider the following type declaration for a doubly linked list node

```
class DListNode{  
    int data;  
    DListNode prev  
    DListNode next;  
}
```

Which of the following statements (in correct order) will correctly insert a newNode node before the node referenced by current? Assume that current is neither first nor last node in the linked list.

- `newNode.next = current; current.prev = newNode;`  
`newNode; newNode.prev = current.prev;`  
`current.prev.next = newNode;`
- `current.prev = newNode;`  
`newNode.next = current; newNode;`  
`prev = current.prev;`  
`current.prev.next = newNode;`
- `newNode.prev = current.prev;`  
`newNode.next = current;`  
`current.prev.next = newNode;`  
`current.next.prev = newNode;` ✓
- `newNode.prev = current.prev;`  
`newNode.next = current; current.`  
`Prev.next = newNode; current.prev =`  
`newNode;`

**Solution -**

```
newNode.prev = current.prev;  
newNode.next = current;  
current.prev.next = newNode;  
current.next.prev = newNode;
```

**46 of 70**

If the list is a circular linked list, with first points to the first node and temp points to the last node. Which of the following code snippet will delete a node, which is after temp?

```
class Node {  
    int data;  
}
```

```
Node next;  
}
```

- 1 mynode=first mynode.next=temp.next; mynode.next=first;
- 2 mynode=first temp.next=mynode; mynode.next-first
- 3 temp.next-first. next; mynode=first; first=first.next; mynode. next=null
- 4 None of the above ✓

## Solution -

None of the above

### 47 of 70

Suppose a circular queue of capacity  $(n - 1)$  elements is implemented with an array of  $n$  elements. Assume that the insertion and deletion operation are carried out using REAR and FRONT as array index variables, respectively. Initially, REAR = FRONT = 0. The conditions to detect queue full and queue empty are

- 1 Full:  $(\text{REAR}+1) \bmod n == \text{FRONT}$ , empty:  $\text{REAR} == \text{FRONT}$  ✓
- 2 Full:  $(\text{REAR}+1) \bmod n == \text{FRONT}$ , empty:  $(\text{FRONT}+1) \bmod n == \text{REAR}$
- 3 Full:  $\text{REAR} == \text{FRONT}$ , empty:  $(\text{REAR}+1) \bmod n == \text{FRONT}$
- 4 Full:  $(\text{FRONT}+1) \bmod n == \text{REAR}$ , empty:  $\text{REAR} == \text{FRONT}$

## Solution -

Full:  $(\text{REAR}+1) \bmod n == \text{FRONT}$ , empty:  $\text{REAR} == \text{FRONT}$

### 48 of 70

How many Stacks are required to implement Queue data structure?

- 1 5
- 2 1
- 3 2 ✓
- 4 3

## Solution -

2

### 49 of 70

Which of the following algorithm can be used to detect negative cycle in a Graph?

- 1 Prim
- 2 Kruskal
- 3 Dijkstra
- 4 Bellman Ford ✓

## Solution -

Bellman Ford

### 50 of 70

What is the worst case possible height of AVL tree?

- 1  $2\log n$  Assume base of log is 2
- 2  $1.44\log n$  Assuming base of log is 2 ✓
- 3 Depends upon implementation

- 4  theta(n)

## Solution -

1.44Log n Assuming base of log is 2

### 51 of 70

Which of the following types of Linked List support forward and backward traversal?

- 1  Singly Linked List
- 2  Doubly Linked List ✓
- 3  Circular Singly Linked List
- 4  All of these

## Solution -

Doubly Linked List

### 52 of 70

Let A[1...n] be an array of n distinct numbers.

If  $A[i > j]$ , then the pair  $(i, J)$  is called an inversion of A. What is the expected number of inversions in any permutation on n elements?

- 1   $n(n-1)/2$
- 2   $n(n-1)/4$  ✓
- 3   $n(n+1)/4$
- 4   $2nf[\log n]$

## Solution -

$n(n-1)/4$

### 53 of 70

Suppose the numbers 7, 5, 1, 8, 3, 6, 0, 9, 4, 2 are inserted in that order into an initially empty binary search tree. The binary search tree uses the usual ordering on natural numbers. What is the in-order traversal sequence of the resultant tree?

- 1  7 5 1 0 3 2 4 6 8 9
- 2  0 2 4 3 1 6 5 9 8 7
- 3  0 1 2 3 4 5 6 7 8 9 ✓
- 4  9 8 6 4 2 3 0 1 5 7

## Solution -

0 1 2 3 4 5 6 7 8 9

### 54 of 70

Using \_\_\_\_\_ in java, one can sort the arrays.

- 1  System.sort()
- 2  Collection. sort()
- 3  Arrays.sort()
- 4  Array.sort() ✓

## Solution -

Array.sort()

**55 of 70**

A hash function  $h$  defined  $h(\text{key}) = \text{key} \bmod 7$ , with linear probing, is used to insert the keys 44, 45, 79, 55, 91, 18, and 63 into a table indexed from 0 to 6. What will be the location of key 18?

- 1  3
- 2  4
- 3  5 ✓
- 4  6

**Solution -**

5

**56 of 70**

Which algorithm strategy builds up a solution by choosing the option that looks the best at every step?

- 1  Greedy method ✓
- 2  Branch and bound
- 3  Dynamic programming
- 4  Divide and conquer return count

**Solution -**

Greedy method

**57 of 70**

If a node has  $K$  children in B tree, then the node contains exactly keys.

- 1  K?
- 2  K-1 ✓
- 3  K+1
- 4  VK

## Solution -

K-1

### 58 of 70

What is the best way to go for the game-playing problem?

- 1  Optimal Search
- 2  Random Search
- 3  Heuristic Search ✓
- 4  Stratified Search

## Solution -

Heuristic Search

### 59 of 70

A program P reads in 500 integers in the range [0..100] representing the scores of 500 students. It then prints the frequency of each score above 50. What would be the best way for P to store the frequencies?

- 1  an array of 50 numbers ✓
- 2  an array of 100 numbers
- 3  an array of 500 numbers

- 4  a dynamically allocated of 550 numbers

## Solution -

an array of 50 numbers

### 60 of 70

The Inorder traversal of \_\_\_\_\_ will yield a sorted listing of elements.

- 1  Binary trees
- 2  Binary search trees ✓
- 3  Heaps
- 4  AVL Trees

## Solution -

Binary search trees

### 61 of 70

What is the worst case time complexity of Search() operation in an unbalanced Binary Search Tree having 'n' nodes?

- 1   $O(1)$
- 2   $O(\log n)$
- 3   $O(n)$  ✓
- 4   $O(n \log n)$

## Solution -

O(n)

**62 of 70**

Which of the following uses queue as data structure to store data?

- 1  Waiting queue for railway reservation system ✓
- 2  To check whether given string is palindrome
- 3  Display string in reverse order
- 4  DFS traversal of the tree

**Solution -**

Waiting queue for railway reservation system

**63 of 70**

Which data structure is required to convert the infix to prefix notation?

- 1  Stack ✓
- 2  Linked List
- 3  Binary Tree
- 4  Queue

**Solution -**

Stack

**64 of 70**

An algorithm that calls itself directly or indirectly is known as\_\_\_\_\_

- 1  Sub algorithm
- 2  Recursive algorithms ✓
- 3  Polish notation
- 4  Traversal algorithm

## Solution -

Recursive algorithms

### 65 of 70

Which of the following options is not true about the Binary Search Tree?

- 1  The value of the left child should be less than the root node. ✓
- 2  The value of the right child should be greater than the root node
- 3  The left and the right sub trees should also be a binary search tree
- 4  None of the above

## Solution -

The value of the left child should be less than the root node.

### 66 of 70

The time required to search an element in a linked list of length is\_\_\_\_\_.

- 1   $O(\log n)$
- 2   $O(n)$  ✓
- 3   $O(1)$

- 4  O(n?)

## Solution -

O(n)

### 67 of 70

is a collision-resolution scheme that searches the hash table for an unoccupied location beginning with the original location that the hash function specifies and continuing at increments of  $1^2$ ,  $2^2$ ,  $3^2$ , and so on.

- 1  Linear probing
- 2  Double hashing
- 3  Quadratic probing ✓
- 4  Separate chaining

## Solution -

Quadratic probing

### 68 of 70

singly linked list if head points to the first node, which of the following code will print data in last node?

- Temp=head;  
 while(temp!=null) {  
 temp=temp.next;  
 }  
 1 System.out.println(temp.data)

- 1 temp=head;  
while(temp.next!=null){  
temp=temp.next;  
{  
**2** System.out.println(temp.data); ✓

- 3 Temp=head;  
while(temp.next==null) {  
temp=temp.next;  
}  
**3** System. Out. println(temp.data);  
 4 Temp=head;  
while(temp==null){

## Solution -

```
temp=head;  
while(temp.next!=null){  
temp=temp.next;  
{  
System.out.println(temp.data);
```

### 69 of 70

What is time complexity of the following code? int sum=0;  
for (int i = 0; i < n; i++) {  
sum=sum+10;  
for (int j = 0; j < n; j++) {  
sum=sum + j;  
break;  
}  
}

- 1**  0( $n^2$ )  
**2**  0(n) ✓  
**3**  0 (1)  
**4**  0(log n)

## Solution -

O(n)

### 70 of 70

What is the best-case time complexity of Bubble sort to sort an array of 'n' elements?

- 1  O( $n^2$ )
- 2  O( $n \log n$ )
- 3  O(1)
- 4  O(n) ✓

## Solution -

O(n)

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