DS_mcq

08 September 2021 17:12

1. Which of the following is not a linear data structure

Answers

1. Array
2. Linked List
3. Stack
4. Tree

2. The complexity of linear search algorithm is

Answers

1. O(log n)
2. O(n)
3. O(n^2)
4. O(n log n)

3. A Complete Binary tree is defined as binary tree where?

Answers

1. All leaf. nodes are on level n+1 and n
2. All leaf nodes are on level n
3. All leaf nodes are on level n-1
4. All leaf nodes are on level n and n-1

4. The infix expression 5+3*9/(7-4)-6*2 when converted to postfix the final result would evaluate to?

Answers

1. 2
2. 1
3. 3
4. 4

5. Which of the following c code is used to create new node?

```
struct node { int data; struct node * next; } ;
typedef struct node NODE;
NODE *ptr;
```

Answers

1. ptr=(NODE*)malloc(sizeof(NODE));

2. ptr=(NODE*)malloc(NODE);

3. ptr=(NODE*)malloc(sizeof(NODE*));

4. ptr=(NODE)malloc(sizeof(NODE));

6. What will be the output of following expression when we convert infix to postfix? ((A+B) * (C-D)) / E

Answers

1. AB + CD -E*/

2. AB + CD *-E/

3. AB + CD *E-/

4. AB + CD -*E/

7. Worst Case Complexity of Insertion sort?

Answers

1. 0(n^2)

2. 0(n)

3. 0(1)

4. 0(n log n)

8. Construct a Binary Search Tree and give the preorder Traversal 20,30,10,5,16,21,29,45,0,15,6 ?

Answers

1. 20 10 5 0 6 16 15 30 21 45 29

2. 20 10 5 6 0 30 21 29 45 29 45

3. 20 10 5 0 6 16 15 29 21 45 30

4. 20 10 5 0 6 16 15 30 21 29 45

9. Which of the following algorithm does not uses divide and conquer strategy?

Answers

1. Quick Sort

2. Merge Sort

3. Binary search

4. All of the above

10. The operation of visiting each element exactly once in the list is known as?

Answers

1. Sorting

2. Merging

3. Inserting

4. Traversal

11. A normal queue, if implemented using an array of size MAX_SIZE, gets full when

Answers

1. Rear = MAX_SIZE - 1

2. Front = MAX_SIZE - 1

3. Front = rear + 1

4. Rear = front

12. Which of the following is not a collision resolution technique in hashing ?

Answers

1. Open addressing

2. Separate chaining

3. Probing

4. Polling

13. A Complete Graph with N vertices has?

Answers

1. n edges

2. n-1 edges

3. n(n-1)/2 edges

4. n(n-1) edges

14. Which of the following condition checks the overflow condition for stack?

Answers

1. Top = MAX + 1

2. Top = MAX - 1

3. Top = -1

4. All of the above

15. Depth first search can be implemented using

Answers

1. Queue

2. Stack

3. Linked list

4. Array

16. Which of the following sorting algorithm is also called as partition exchange sort?

Answers

1. Insertion Sort

2. Selection Sort

3. Radix Sort

4. Quick Sort

17. How many cycles does spanning tree have?

Answers

1. Minimum 1

2. Greater than 1

3. 0

4. 1

18. Which of the following structure is used to implement linked lists in C?

Answers

1. typedef struct node { int data; struct node *next; }NODE;

2. typedef struct node { int data; node *next; }NODE;

3. typedef struct node { int data; struct node next; }*NODE;

4. Both 1 and 2

19. Which of the following Data Structures are implemented in cut,copy,paste operations?

Answers

1. Queue

2. Stack

3. Both of Above

4. Graph

20. A graph is a collection of nodes, called_____And line segments called arcs or _____that connect pair of nodes.

Answers

1. vertices, paths

2. vertices, edges

3. graph node, edges

4. edges, vertices

h(key)=key mod 7, with linear probing, is used to insert the keys 44,45,79,55,91,18,63 into a table indexed fr

Answers

1. 3

2. 4

3. 5

4. 6

22. What is the value of the postfix expression 6 3 2 4 + – *:

Answers

1. 1

2. 40

3. 74

4. -18

23. Dijkstra's Algorithm is used to solve_____ problems.

Answers

1. All pair shortest path

2. Network flow

3. Single source shortest path

4. Sorting

24. What does the following function do for a given Linked List with address Of first node in a head pointer?

```
void fun1(struct node* head)
{
if(head == NULL)
return;
fun1(head->next);
printf("%d ", head->data);
 }
```

Answers

1. Prints all nodes of linked lists

2. Prints all nodes of linked list in reverse Order

3. Prints alternate nodes of Linked List

4. Prints alternate nodes in reverse order

l); Pop(); Push(2); Push(3); Pop(); Push(4); Pop(); Pop(); Push(5); After the completion of all operation, the number of elements present in stack

Answers

1. 1

2. 2

3. 3

4. 4

26. The concatenation of two list can performed in O(1) time. Which of the following variation of linked list can be used?

Answers

1. Singly linked list

2. Doubly linked list

3. Circular doubly linked list

4. Array implementation of list

27. If the elements “A”, “B”, “C” and “D” are placed in a queue and are deleted one at a time, in what order will they be removed?

Answers

1. ABCD

2. DCBA

3. DCAB

4. ABDC

28. What is the speciality about the inorder traversal of a binary search tree?

Answers

1. It traverses in a non increasing order

2. It traverses in an increasing order

3. It traverses in a random fashion

4. It traverses based on priority of the node

29. What will be the height of a balanced full binary tree with 8 leaves?

Answers

1. 8

2. 5

3. 6

4. 4

30. Running merge sort on an array of size n which is already sorted is

Answers

1. O(n)

2. O(n log n)

3. O(n2)

4. None

31. Quadratic probing overcomes primary collision.

Answers

1. True

2. False

32. The post order traversal of binary tree is DEBFCA. Find out the pre order traversal.

Answers

1. ABFCDE

2. ADBFEC

3. ABDECF

4. ABDCEF

33. Breadth First search

Answers

1. scans all incident edges before moving to other vertex

2. Scans adjacent unvisited vertex as soon as possible

3. Is same as backtracking

4. Computer a path between two vertices of graph equivalently

34. The result of evaluating prefix expression */b+-dacd, where a=3, b=6, c=1, d=5 is:

Answers

1. 0

2. 5

3. 10

4. 15

35. O(n^2) means computing time is_____

Answers

1. Constant

2. Quadratic

3. Linear

4. Cubic

36. The number of edges from the node to the deepest leaf is called _____ of the tree.

Answers

1. Height

2. Depth

3. Length

4. None of the mentioned

37. A circular queue of size N will sign queue full when the number of elements in the queue is

Answers

1. N-1

2. N

3. N+1

4. N-2

38. Which of the following operations is performed more efficiently by doubly linked list than by singly linked list?

Answers

1. Deleting a node whose location in given

2. Searching of an unsorted list for a given item

3. Inverting a node after the node with given location

4. Traversing a list to process each node

39. Consider the following doubly linear linked list and find the output of given code:

```
head                        tail
1 <--> 2 <--> 3 <--> 4 <--> 5
4000 2000 2800 4800 3000
trav= tail;
while(trav!=NULL && trav->prev!=NULL)
{
print("%d-->",trav->data);
trav = trav->prev->prev;
}
```

Answers

1. 5-->3-->1

2. 5-->4-->3-->2-->1

3. 5-->3-->

4. 1-->3-->5

40. The following postfix expression with single digit operands is evaluated using a stack:

8 2 3 ^ / 2 3 * + 5 1 * -

Note that ^ is the exponentiation operator. The top two elements of the stack after the first * is ___

Answers

1. 6,1

2. 5,7

3. 3,2

4. 1,5