MCQs

1. What is the worst case time complexity of selection sort?

a)O(n^3)

b)O(nlogn)

c)O(n^2)

d)O(n)

Correct Ans: O(n^2)

2. The popular notion to describe stack is?

a)Last in First out

b)Frist in First out

c)None of the above

d)Both a and b

Correct Ans: Last in First out

3. What is the best case time complexity of selection sort?

a)O(n^3)

b)O(nlogn)

c)O(n^2)

d)O(n)

Correct Ans: O(n)

4. In which sorting algorithm, we use frequency of the elements to sort the array?

a)Bucket Sort

b)Bubble Sort

c)Count Sort

d)Merge Sort

Correct Ans: Count Sort

5. What is the time complexity of finding an element in a Singly LinkedList?

a)O(nlogn)

b)O(n)

c)O(1)

d)O(logn)

Correct Ans: O(n)

6. Which of the following is not a stable sorting algorithm?

a)Quick Sort

b)Bubble Sort

c)Count Sort

d)Merge Sort

Correct Ans: Quick Sort

7. When we try to remove the element from the stack, and if the stack is already empty, this situation can be described as?

a)Underflow

b)Overflow

c)None of the above

d)Both a and b

Correct Ans: Underflow

8. In queue, we push the element at _____ position

a)top

b)end

c)middle

d)None of the above

Correct Ans: top

9. Which of the following statement is true about LinkedList?

a)LinkedList is a non-linear data structure

b)Elements in linkedlist are stored in contiguous memory location

c)Linkedlist can not shrink during program execution

d)None ofthe above

Correct Ans: None ofthe above

10. In which sorting algorithm, we sort the array with the least significant digit then move towards the most significant digit

a)Quick Sort

b)Bubble Sort

c)Count Sort

d)Radix Sort

Correct Ans: Radix Sort

11. What is the worst case time complexity of bucket sort?

a)O(n^3)

b)O(nlogn)

c)O(n^2)

d)O(n)

Correct Ans: O(n^2)

12. We can use count sort to sort string lexographically

a)TRUE

b)FALSE

Correct Ans: TRUE

13. A circular linkedlist can be implemented for?

a)Singly LL

b)Doubly LL

c)Both a and b

d)None of the above

Correct Ans: Both a and b

14. What is the time complexity of inserting the element at the end position in a Circular LinkedList?

a)O(1)

b)O(n)

c)Depends on the implementation

d)None of the above

Correct Ans: O(1)

15. To improve the time complexity of Radix sort, we should _____ the base.

a)Increase

b)Decrease

c)No Change

d)None of the above

Correct Ans: Increase

16. Which of the following data structure can be implemented using LinkedList?

a)Stack

b)Queue

c)Both a and b

d)None of the above

Correct Ans: Both a and b

17. Which of the following is not a type of LinkedList?

a)Singly LL

b)Doubly LL

c)Circular LL

d)None of the above

Correct Ans: None of the above

18. What is the time complexity of adding an element in a Singly LinkedList?

a)O(1)

b)O(n)

c)Depends on the implementation

d)None of the above

Correct Ans: Depends on the implementation

19. LinkedList are memory efficient as they required less memory as compared to Arrays

a)TRUE

b)FALSE

Correct Ans: FALSE

20. What is the time complexity of deleting the element at the start position in a Doubly LinkedList?

a)O(1)

b)O(n)

c)Depends on the implementation

d)None of the above

Correct Ans: O(1)

21. Queue can be implemented using which data structure?

a)Array

b)LinkedList

c)Stack

d)All of the above

Correct Ans: All of the above

22. In which of the following type of LinkedList, the next pointer is never null?

a)Singly LL

b)Doubly LL

c)Circular LL

d)None of the above

Correct Ans: Circular LL

23. FIFO is used for which data structure?

a)Stack

b)Queue

c)Both a and b

d)None of the above

Correct Ans: Queue

24. Nodes can be added to a LinkedList at?

a)Start of the LL

b)End of the LL

c)Anywhere between start and end of the LL

d)All of the above

Correct Ans: All of the above

25. The space complexity of reversing the LinkedList is?

a)O(nlogn)

b)O(n)

c)O(1)

d)O(logn)

Correct Ans: O(n)

26. The condition when our stack is full and you cannot push any more element in the stack is called?

a)Underflow

b)Overflow

c)None of the above

d)Both a and b

Correct Ans: Overflow

27. The time complexity of reversing the LinkedList is?

a)O(nlogn)

b)O(n)

c)O(1)

d)O(logn)

Correct Ans: O(n)

28. In stack, we push the element at _____ position

a)top

b)end

c)middle

d)None of the above

Correct Ans: top

29. Fields associated with Doubly LinkedList are

a)next

b)data

c)previous

d)All of the above

Correct Ans: All of the above

30. Stack can be implemented using which data structure?

a)Array

b)LinkedList

c)Both a and b

d)None of the above

Correct Ans: Both a and b

31. The process of inserting the element into the stack is called?.

a)push

b)pop

c)top

d)None of the above

Correct Ans: push

32. An operation for retreiving the topmost element of the stack is known as

a)push

b)pop

c)peek

d)None of the above

Correct Ans: peek

33. We can find the middle of the LinkedList in _____ time complexity.

a)O(nlogn)

b)O(n)

c)O(1)

d)O(logn)

Correct Ans: O(n)

34. What is the time complexity of deleting the element at the end position in a Circular LinkedList?

a)O(1)

b)O(n)

c)Depends on the implementation

d)None of the above

Correct Ans: O(1)

35. LinkedList are not stored in contiguos memory location.

a)TRUE

b)FALSE

Correct Ans: TRUE

36. In queue, it is possible to access the middle element directly

a)TRUE

b)FALSE

Correct Ans: FALSE

37. Which of the following is a non-comparison-based algorithm?

a)Bucket Sort

b)Bubble Sort

c)Count Sort

d)Merge Sort

Correct Ans: Bucket Sort

38. Bucket sort can be used with

a)Insertion Sort

b)Count Sort

c)Bucket Sort

d)All of the above

Correct Ans: All of the above

39. What will be the space complexity of the program where we use an additional stack for storing n elements?

a)O(nlogn)

b)O(n)

c)O(1)

d)O(logn)

Correct Ans: O(n)

40. Fields associated with Circular Singly LinkedList are

a)next

b)data

c)previous

d)Only a and b

Correct Ans: Only a and b