Backend Development MilestoneTest - 8

Round 1

1. Insertion and Deletion operation in Queue is known as?

A) Push and Pop
B) Enqueue and Dequeue
C) Insert and Delete
D) None

Correct Ans: Enqueue and Dequeue

2. How many queues are needed to implement a stack. Consider the situation where no other data structure like arrays, linked list is available to you.

A) 1
B) 2
C) 3
D) 4

Correct Ans: 2

3. New nodes are added to the ..... of the queue.

A) front
B) back
C) middle
D) both a and b

Correct Ans: back

4. Time Complexity of Deque Operation is ?

A) O(n)
B) O(1)
C) O(log n)
D) O(nlog n)

Correct Ans: O(1)

5. When does underflow happens?

A) When the queue is empty and deque is performed
B) When the queue is full and insertion is performed
C) In either cases
D) In neither cases

Correct Ans: When the queue is empty and deque is performed

6. Which operations are performed in deque?

A) addition from front
B) addition from back
C) removal from front
D) All of the above

Correct Ans: All of the above

7. 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?

A) ABCD
B) DCBA
C) DCAB
D) ABDC

Correct Ans: ABCD

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

A) Front = (rear + 1)mod MAX_SIZE

B) Front = rear + 1

C) Rear = MAX_SIZE – 1

D) Rear = front

Correct Ans: Rear = MAX_SIZE – 1

9. What does the following code does?

```
if (this.isEmpty()) {
    return undefined;
  }
  let result = this.items[this.front];
  this.items[this.front] = 0;
  this.front++;
  return result;
```

A) remove element from back

B) remove element from front of queue

C) insert element to front of queue

D) insert elemenet to back of queue

Correct Ans: remove element from back

10. Following code snipped it to perform which operation of queue?

```
this.data[this.rear] = ele;
    this.rear = this.rear + 1;
```

A) deque

B) enqueue

C) initialization

D) none of these

Correct Ans: deque

11. 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

12. The term Push and Pop is related to

A) Stack

B) Queue

C) Linked List

D) none of these

Correct Ans: Stack

13. 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

14. Choose correct output for the following sequence of operations.
push(5)
push(8)
pop
push(2)
push(5)
pop
pop
pop
push(1)
pop

A) 8 5 2 5 1
B) 8 5 5 2 1
C) 8 2 5 5 1
D) 8 1 2 5 5
Correct Ans: 8 5 2 5 1

15. FIFO is used for which data structure?
A) Stack
B) Queue
C) Both a and b
D) None of the above
Correct Ans: Queue

16. Postfix form of following expression.
D + (E * F)
A) EF * D+
B) DEF * +
C) DEF +*
D) EFD *+
Correct Ans: DEF * +

17. The space complexity of reversing the LinkedList is?
A) O(nlogn)
B) O(n)
C) O(1)
D) O(logn)
Correct Ans: O(n)

18. A stack data structure cannot be used for
A) Implementation of Recursive Function
B) Allocation Resources and Scheduling
C) Reversing string
D) Evaluation of string in postfix form
Correct Ans: Allocation Resources and Scheduling

19. 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

20. In stack, we push the element at _____ position
A) top
B) end
C) middle
D) None of the above
Correct Ans: top

21. The process of inserting an element in the stack is called?

A) Enqueue
B) Insert
C) Push
D) Pop
Correct Ans: Push

22. 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

23. declare a stack of characters
while (there are more characters in the word to read)
{
read a character
push the character on the stack
}
while (the stack is not empty)
{
pop a character off the stack
write the character to the screen
}
Write the output for "relevel"
A) leveler
B) levelre
C) relevel
D) None of these
Correct Ans: leveler

24. 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

25. 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 evaluated are:
A) 6,1
B) 5,7
C) 3,2
D) 1,5
Correct Ans: 6,1

26. 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

27. The result evaluating the postfix expression 10 5 + 60 6 / * 8 – is
A) 284
B) 213
C) 142
D) 71
Correct Ans: 142

28. 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)

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

A) TRUE
B) FALSE
C)
D)

Correct Ans: FALSE

30. 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)

31. 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

32. 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

33. The time complexity of reversing the LinkedList is?

A) O(nlogn)
B) O(n)
C) O(1)
D) O(logn)

Correct Ans: O(n)

34. Fields associated with Doubly LinkedList are

A) next
B) data
C) previous
D) All of the above

Correct Ans: All of the above

35. 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)

36. 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)

37. LinkedList are not stored in contiguos memory location.

A) TRUE
B) FALSE
C)
D)

Correct Ans: TRUE

38. Fields associated with Circular Singly LinkedList are

A) next
B) data
C) previous
D) Only a and b

Correct Ans: Only a and b

39. 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

40. 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)