

MCQs of Data Structure

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CONCEPTS
of
**OBJECT ORIENTED
PROGRAMMING**
with
**DATA
STRUCTURE**

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MCQs OF DATA STRUCTURE

1. Stack is also known as _____.

- a) **LIFO**
- b) LILO
- c) FIFO
- d) None of these

2. Removal of item from the Stack is known as _____.

- a) peep
- b) push
- c) **pop**
- d) delete

3. In _____, items are added at one end and removed from other end.

- a) stack
- b) **queue**
- c) Linked list
- d) array

4. Identify the data structure which allows deletion at both ends but insertion at only one end.

- a) **input restricted dequeue**
- b) output restricted dequeue
- c) stack
- d) Circular queue

5. What is the initial value of top in stack of 5 elements?

- a) **-1**
- b) 0
- c) 4
- d) 5

6. Which of the following is not the type of queue?

- a) simple queue
- b) **single ended queue**
- c) double ended queue
- d) circular queue

7. New data cannot be inserted because of insufficient space; this situation is called _____.

- a) underflow

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- b) houseful
c) overflow
d) saturated
8. _____ term is used to insert an element into stack?
a) push
b) pull
c) pop
d) peep
9. The postfix form of $A*B+C/D$ is _____.
a) $ABCD+/*$
b) $AB*CD/+$
c) $*AB/CD+$
d) $A*BC+/D$
10. Pushing an element into stack, already having five elements and size of stack is 5, then stack becomes _____.
a) Overflow
b) Crash
c) Underflow
d) User flow
11. What is the value of the following postfix expression?
 $6\ 3\ 2\ 4\ +\ -\ *$
a) 1
b) 40
c) 74
d) -18
12. Here is an infix expression: $4 + 3*(6*3-12)$. Suppose that we are using the usual stack Algorithm to convert the expression from infix to postfix notation. The maximum number of symbols that will appear on the stack AT ONE TIME during the conversion of this expression?
a) 1
b) 2
c) 3
d) 4
13. Which of the following operation is not supported by a queue?
a) Inserting element at rear
b) Removing element from front
c) Removing element from middle
d) None of above
14. With an array-based stack, the algorithm for push is _____.
a) Increment top and add item to the new top location
b) Add item to the top location and then decrement top

- c) Return the top item and increment top
d) Return the top item and decrement top
15. What will be the value of top, if there is a size of stack 'S' is 4 and it is full?
- a) 5
b) 3
c) 4
d) None of Above
16. When does 'top' value of the stack changes if you are deleting element?
- a) Before deletion
b) At the time of deletion
c) **After deletion**
d) While Checking Underflow
17. The postfix form of the expression $(A + B) * (C * D - E) * F / G$ is?
- a) $AB + CD * E - FG / **$
b) $AB + CD * E - F ** G /$
c) $AB + CD * E - * F * G /$
d) **$AB + CDE * - * F * G /$**
18. A data structure where elements can be added or removed at either end but not in the middle is called _____.
- a) Linked lists
b) Stacks
c) Queues
d) **Deque**
19. The term Push and Pop is related to _____.
- a) Queue
b) **Stack**
c) Both
d) None
20. 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) 85521
b) **85251**

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- c) 82551
d) 81255
21. What is the Postfix form of the expression $D + (E * F)$?
a) $EF * D +$
b) $DEF * +$
c) $DEF + *$
d) $EFD * +$
22. Before inserting into stack we must check the condition _____.
a) Underflow
b) Overflow
c) Empty
d) Existing element
23. The value of REAR pointer is increased by 1 where _____.
a) An element is merged in a queue
b) An element is traversed in a queue
c) An element is deleted from the queue
d) An element is added in a queue
24. Which operation is not performed on a queue?
a) Traversal
b) Insertion
c) Deletion
d) Retrieval
25. Which are the applications of stack from the following?
a) Function calls
b) Evaluation of arithmetic expressions
c) Both a & b
d) None of the above
26. The data structure required to evaluate a postfix expression is _____.
a) Queue
b) Stack
c) Linked list
d) All of above
27. Consider a standard Circular Queue 'Q' Implementation (which has the same condition for Queue Full and Queue Empty) whose size is 11 and the elements of the queue are Q[0],

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Q[1], Q[2]....., Q[10]. The front and rear pointers are initialized to point at Q[2] . In which position will the ninth element be added?

- a) Q[0]
- b) Q[1]
- c) Q[9]
- d) Q[10]

28. Stack is used for _____.

- a) CPU resource Allocation
- b) Traversal
- c) Recursion
- d) None of the above

29. In the stack, if users try to remove element from the empty stack then it called as _____.

- a) Garbage collection
- b) Empty collection
- c) Overflow of stack
- d) Underflow of Stack

30. A queue is known as _____.

- a) LIFO
- b) FIFO
- c) LILO
- d) FILO

31. Which of the following is an application of stack?

- a) Finding Factorial
- b) Tower of Hanoi
- c) Infix to Postfix Conversion
- d) All of the above

32. Which is the pointer associated with the stack?

- a) FIRST
- b) FRONT
- c) TOP
- d) REAR

33. Deletion operation is done at _____ in a queue.

- a) FRONT
- b) REAR
- c) TOP
- d) LAST

34. push() and pop() functions are found in _____.

- a) Queue

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- b) Stack
- c) Array
- d) None of the above

35. Transform the following infix expression into postfix form:

$$A - B / (C * D)$$

- a) $AB * CD - /$
- b) $ABCD * - /$
- c) $- / DC * BA$
- d) $- / * ABCD$

36. Evaluate the following prefix expression:

$$* - +435 / +243$$

- a) 4
- b) 8
- c) 1
- d) None of the above

37. Evaluate the following postfix expression:

$$1382 / 3 + + 5 / +$$

- a) 8
- b) 2
- c) 3
- d) None of the above

38. Transform the following infix expression into prefix form:

$$((C * 2) + 1) / (A + B)$$

- a) $AB + 12C * + /$
- b) $/ + * C21 + AB$
- c) $/ * + 12CAB +$
- d) None of the above

39. Which among the following data structure may give overflow error, even though the current number of element in it, is less than its size?

- a) Simple Queue
- b) Circular Queue
- c) Stack
- d) None of the above

40. If the characters 'D', 'C', 'B', 'A' are placed in a queue (in that order), and then removed one at a time, in what order will they be removed?

- a) ABCD
- b) ABDC
- c) DCAB
- d) **DCBA**

41. Circular Queue is also known as _____.

- a) **Ring Buffer**
- b) Square Buffer
- c) Rectangle Buffer
- d) Curve Buffer

42. A normal queue, if implemented using an array of size 'MAX_SIZE', it will get full when _____.

- a) **Rear = MAX_SIZE - 1**
- b) $\text{Front} = (\text{rear} + 1) \bmod \text{MAX_SIZE}$
- c) $\text{Front} = \text{rear} + 1$
- d) $\text{Rear} = \text{front}$

43. The type of expression in which operators are written after the operands is?

- a) Infix Expression
- b) Prefix Expression
- c) **Postfix Expression**
- d) Both Prefix and Postfix Expressions

44. If the elements "A", "B", "C" and "D" are placed in a stack and are deleted one at a time, what is the order of removal?

- a) ABCD
- b) **DCBA**
- c) DCAB
- d) ABDC

45. The data structure required to check whether an expression contains a balanced Parenthesis is?

- a) **Stack**
- b) Queue
- c) Array
- d) Tree