MCQ_Stack

1. Process of inserting an element in stack is called _____
   a) Create b) Push c) Evaluation d) Pop
2. Process of removing an element from stack is called _____
   a) Create b) Push c) Evaluation d) Pop
3. In a stack, if a user tries to remove an element from empty stack it is called _____
   a) Underflow b) Empty collection c) Overflow d) Garbage Collection
4. Pushing an element into stack already having five elements and stack size of 5 , then stack becomes
   a) Overflow b) Crash c) Underflow d) User flow
5. Which of the following is not application of stack?
   a) A parentheses balancing program. b) Evaluation of Prefix notation.
   c) Compiler Syntax Analyzer. d) Evaluation of postfix e) All are application of stack
6. Consider the usual algorithm for determining whether a sequence of parentheses is balanced. The maximum number of parentheses that appear on the stack AT ANY ONE TIME when the algorithm analyzes: (()(()(()))) are:
   a) 1 b) 2 c) 3 d) 4 or more
7. Consider the usual algorithm for determining whether a sequence of parentheses is balanced. Suppose that you run the algorithm on a sequence that contains 2 left parentheses and 3 right parentheses (in some order). The maximum number of parentheses that appear on the stack AT ANY ONE TIME during the computation?

   a) 1 b) 2 c) 3 d) 4 or more
8. What is the value of the postfix expression 6 3 2 4 + – *:
   a) 64 b) -18 c) Something between 5 and 15 d) None
9. 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 is ___
   a) 1 b) 2 c) 3 d) 4
10. 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 /

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11. The data structure used to check if an expression contains balanced parenthesis is?
    a) Stack b) Queue c) Array d) Tree

12. What data structure would you mostly likely see in a non recursive implementation of a recursive algorithm?
    a) Linked List b) Stack c) Queue d) Tree

13. The process of accessing data stored in a serial access memory is similar to manipulating data on a _____
    a) Heap b) Binary Tree c) Array d) Stack

14. The postfix form of A*B+C/D is?
    a) *AB/CD+ b) AB*CD/+ c) A*BC+/D d) ABCD+/*

15. Which data structure is needed to convert infix notation to postfix notation?
    a) Branch b) Tree c) Queue d) Stack

16. The prefix form of A-B/ (C * D ^ E) is?
    a) -/*^ACBDE b) -ABCD*^DE c) -A/B*C^DE d) -A/BC*^DE

17. What is the result of the following operation? Top (Push (S, X))
    a) X b) Null c) S d) None

18. The prefix form of an infix expression p + q – r * t is?
    a) + pq – *rt b) – +pqr * t c) – +pq * rt d) – + * pqrt

19. Which data structure is used for implementing recursion?
    a) Queue b) Stack c) Array d) List

20. The result of evaluating the postfix expression 5, 4, 6, +, *, 4, 9, 3, /, +, * is?
    a) 600 b) 350 c) 650 d) 588

21. Convert the following (A + B ∧D)/(E – F)+G into its equivalent postfix expressions
    a) (A B D ∧ + E F – / G +) b) (A B D +∧ E F – / G +)
    c) (A B D ∧ + E F/- G +) d) None of the mentioned

22. Which of the following statement(s) about stack data structure is/are NOT correct?
    a) Linked List is used to implement Stack b) Stack Top always contain the new node
    c) Stack is the FIFO data structure d) Null link is present at the bottom of the stack

23. Consider the following operation performed on a stack of size 5.
    Push(1); Pop(); Push(2); Push(3); Pop(); Push(4); Pop(); Pop(); Push(5);

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After the completion of all operation, the number of elements present in stack are

a) 1 b) 2 c) 3 d)

24. Which of the following is not an inherent application of stack?

a) Reversing a string b) Evaluation of postfix expression

c) Implementation of recursion d) Job scheduling

25. The type of expression in which operator succeeds its operands is?

a) Infix Expression b) Prefix Expression c) Postfix Expression d) None

26. 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

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

a) Managing function calls b)The stock span problem

c) Arithmetic expression evaluation d)All of the above

30. Which of the following real world scenarios would you associate with a stack data structure?

a) piling up of chairs one above the other

b) people standing in a line to be serviced at a counter

c) offer services based on the priority of the customer

d) all of the mentioned

31. What does the following function check for? (all necessary headers to be included and function is called from main)

```
#define MAX 10
        typedef struct stack   {
                int top;
                int item[MAX];
         }stack;
        int function(stack *s)          {
                if(s->top == -1)
                        return 1;
                 else return 0;
                }
```

a) full stack b) invalid index c) empty stack d) infinite stack

32. What does ‘stack underflow’ refer to?

a) accessing item from an undefined stack b) adding items to a full stack

c) removing items from an empty stack d) index out of bounds exception

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33. What is the time complexity of pop() operation when the stack is implemented using an array?
    a) O(1) b) O(n) c) O(logn) d) O(nlogn)
34. What will be the output after performing these sequence of operations:

    push(20); push(4); top(); pop(); pop(); pop(); push(5); top();

    a) 20 b) 4 c) stack underflow d) 5
35. Which of the following data structures can be used for parentheses matching?
    a) n-ary tree b) queue c) priority queue d) stack
36. What does 'stack overflow' refer to?
    a) accessing item from an undefined stack b) adding items to a full stack
    c) removing items from an empty stack d) index out of bounds exception
37. Which of the following array position will be occupied by a new element being pushed for a stack of size N elements (capacity of stack > N, C program).
    a) S[N-1] b) S[N]. c) S[1]. d) S[0]
38. Which of the following array element will return the top-of-the-stack-element for a stack of size N elements (capacity of stack > N).
    a) S[N-1]. b) S[N]. c) S[N-2]. d) S[N+1].
39. Minimum number of queues to implement stack is,
    a) 3 b) 4 c) 1 d) 2