**Unit-2**

**Stacks Queues**

1. In a queue, the initial values of front pointer f rare pointer r should be …….. and ……….. respectively.

A) 0 and 1 B) 0 and -1 C) -1 and 0 D) 1 and 0

1. 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

1. evaluate Expression 100 \* ( 2 + 12 ) / 14

A)100 B)1400 C)14 D)10

1. Insertion operation is done using ......... in a queue.

A. front B. rear C. top D. list

1. ......... form of access is used to add and remove nodes from a Stack.

A. LIFO, Last In First Out B. FIFO, First In First Out

C. Both a and b D. None of these

1. An algorithm that calls itself directly or indirectly is known as

a. Sub algorithm b. Recursion c. Polish notation d. Traversal algorithm

1. The prefix form of an infix expression p + q - r \* t is

(A) + pq - \*rt . (B) - +pqr \* t . (C) - +pq \* rt . (D) - + \* pqrt .

1. List of data in which elements can be inserted and removed at the same end is called as\_\_\_\_\_\_

A)Queue B)Stack C)list D)Array

1. In the Stack if user try to remove elements from the empty stack than it is called as\_\_\_\_\_\_

A)Underflow B)Empty Collection C)Overflow D)Garbage Collection

1. Evaluate Expression: (((2 \* 5) - (1 \* 2)) / (11 - 9))

A)4 B) 2 C) 6 D) 8

1. Overflow condition for circle queue

A)f==0 && r=N-1 B) f=r+1 C)Both A&B D) Either A or B

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. 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
4. Entries in a stack are “ordered”. What is the meaning of this statement?  
   a) A collection of stacks is sortable

b) Stack entries may be compared with the ‘<‘ operation  
c) The entries are stored in a linked list

d) There is a Sequential entry that is one by one

1. 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: (()(())(()))?  
   a) 1 b) 2 c) 3 d) 4 or more
2. What is the value of the postfix expression 6 3 2 4 + – \*?  
   a) 1 b) 40 c) 74 d) -18
3. 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
4. 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 /
5. The data structure required to check whether an expression contains a balanced parenthesis is?  
   a) Stack b) Queue c) Array d) Tree
6. What data structure would you mostly likely see in non recursive implementation of a recursive algorithm?  
   a) Linked List b) Stack c) Queue d) Tree
7. The prefix form of A-B/ (C \* D ^ E) is?  
   a) -/\*^ACBDE b) -ABCD\*^DE c) -A/B\*C^DE d) -A/BC\*^DE
8. What is the result of the following operation?  
   **Top (Push (S, X))**  
   a) X b) X+S c) S d) XS
9. Which data structure is used for implementing recursion?  
   a) Queue b) Stack c) Array d) List
10. Convert the following infix expressions into its equivalent postfix expressions.  
    **(A + B ⋀D)/(E – F)+G**  
    a) (A B D ⋀ + E F – / G +) b) (A B D +⋀ E F – / G +)  
    c) (A B D ⋀ + E F/- G +) d) (A B D E F + ⋀ / – G +)
11. Which of the following statement(s) about stack data structure is/are NOT correct?  
    a) Linked List are used for implementing Stacks  
    b) Top of the Stack always contain the new node  
    c) Stack is the FIFO data structure  
    d) Null link is present in the last node at the bottom of the stack
12. The type of expression in which operator succeeds its operands is?  
    a) Infix Expression b) Prefix Expression

c) Postfix Expression d) Both Prefix and Postfix Expressions

1. Assume that the operators +,-, X are left associative and ^ is right associative. The order of precedence (from highest to lowest) is ^, X, +, -. The postfix expression for the infix expression a + b X c – d ^ e ^ f is?  
   a) abc X+ def ^^ – b) abc X+ de^f^ – c) ab+c Xd – e ^f^ d) -+aXbc^ ^def
2. 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
3. A linear list of elements in which deletion can be done from one end (front) and insertion can take place only at the other end (rear) is known as \_\_\_\_\_\_\_\_\_\_\_\_\_  
   a) Queue b) Stack c) Tree d) Linked list
4. A queue follows \_\_\_\_\_\_\_\_\_\_  
   a) FIFO (First In First Out) principle b) LIFO (Last In First Out) principle  
   c) Ordered array d) Linear tree
5. Circular Queue is also known as \_\_\_\_\_\_\_\_  
   a) Ring Buffer b) Square Buffer c) Rectangle Buffer d) Curve Buffer
6. 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
7. A data structure in which elements can be inserted or deleted at/from both ends but not in the middle is?  
   a) Queue b) Circular queue c) Dequeue d) Priority queue
8. A normal queue, if implemented using an array of size MAX\_SIZE, gets full when?  
   a) Rear = MAX\_SIZE – 1 b) Front = (rear + 1)mod MAX\_SIZE  
   c) Front = rear + 1 d) Rear = front
9. Which of the following is not the type of queue?  
   a) Ordinary queue b) Single ended queue

c) Circular queue d) Priority queue