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TOPIC: Arrays, Searching, Sorting, Linkedlist, Stack
DATE : - 21-01-2024   MAX MARKS : 15
TIME:-15MINUTES   SUB: Data Structures
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1. Which of the following is the advantage of the array data structure?

a. Elements of mixed data types can be stored

b. Easier to access the elements in the array.

c. Index of the first element starts from 1

d. elements of an array cannot be sorted

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

3. In a stack, if a user tries to remove an element from an empty stack it is called _____
a) Underflow
b) Empty collection
c) Overflow
d) Garbage Collection

4. 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 +)

5. 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);
After the completion of all operation, the number of elements present in stack is?
a) 1
b) 2
c) 3
d) 4

6. 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

7. 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

8. 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 /

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

10. What is an internal sorting algorithm?
a) Algorithm that uses tape or disk during the sort
b) Algorithm that uses main memory during the sort
c) Algorithm that involves swapping
d) Algorithm that are considered 'in place'

11. What is the worst case complexity of bubble sort?
a) O(nlogn)
b) O(logn)
c) O(n)
d) O(n²)

12. What is the best case running time of an insertion sort algorithm?
a) O(N)
b) O(N log N)
c) O(log N)
d) O(N²)

13. Given an array a = {45,77,89,90,94,99,100} and key = 99; what are the mid values(corresponding array elements) in the first and second iteration (comparisons) ?
a) 90 and 99
b) 90 and 94
c) 89 and 99
d) 89 and 94

14. Given an array arr = {5,6,77,88,99} and key = 88; How many iterations are done until the element is found?
a) 1
b) 3
c) 4
d) 2

15. In linked list each node contains a minimum of two fields. One field is data field to store the data second field is?
a) Pointer to character
b) Pointer to integer
c) Pointer to node
d) Node

ANSWER KEY :

1. C	2.A	3.A	4.A	5.A
6.C	7.B	8.C	9.B	10.B
11.D	12.A	13.A	14.D	15.C