

1. Given the following C++ statement, which of the following is true?

int A[4], B[3][3], \*p,\*t;

[A] p = &A[0]; t = B;

[B] p = A; t = B;

**[C] p = A; t = &B[0][0];**

[D] None of the above

2. The initial configuration of the queue is a,b,c,d (a is the front end). To get the configuration d,c,b,a one needs a minimum of ?

[A] 2 deletions and 3 additions

[B] 3 additions and 2 deletions

**[C] 3 deletions and 3 additions**

[D] 3 deletions and 4 additions

3. Which of the following algorithm design technique is used in the quick sort algorithm?

[A] Dynamic programming

[B] Backtracking

**[C] Divide and conquer**

[D] Greedy method

4. Given two sorted lists of size m and n respectively. The number of comparisons needed in the worst case by the merge sort algorithm will be?

[A] mn

[B] max(m,n)

[C] min(m,n)

**[D] m+n-1**

5. The following sequence of operation is performed on stack : push(1),push(2),pop, push(1),push(2),pop, pop, pop, push(2),pop. The sequence of popped out values are ?

**[A] 2,2,1,1,2**

[B] 2,2,1,2,2

[C] 2,1,2,2,1

[D] 2,1,2,2,2

6. The postfix expression for  $* + a b - c d$  is?

[A]  $ab + cd - *$

[B]  $ab cd + - *$

[C]  $ab + cd * -$

[D]  $ab + - cd *$

7. If a variable is a pointer to a structure, then which of the following operator is used to access data members of the structure through the pointer variable?

[A.](#) .

[B.](#) &

[C.](#) \*

[D.](#) ->

8. What would be the equivalent pointer expression for referring the array element  $a[i][j][k][l]$

[A.](#)  $(((((a+i)+j)+k)+l))$

[B.](#)  $*(**(*(a+i)+j)+k)+l)$

[C.](#)  $((((a+i)+j)+k)+l)$

[D.](#)  $((a+i)+j+k+l)$

9. A pointer is

[A.](#) A keyword used to create variables

[B.](#) A variable that stores address of an instruction

[C.](#) **A variable that stores address of other variable**

[D.](#) All of the above

10. The operator used to get value at address stored in a pointer variable is

[A.](#) \*

[B.](#) &

[C.](#) &&

[D.](#) ||

11. Which of the following is not the required condition for binary search algorithm?

a. The list must be sorted

b. there should be the direct access to the middle element in any sublist

c. There must be mechanism to delete and/or insert elements in list

d. none of above

12. When inorder traversing a tree resulted E A C K F H D B G; the preorder traversal would return

a. FAEKCDBHG

b. **FAEKCDHGB**

c. EAFKHDCBG

d. FEAKDCHBG

13. Inserting an item into the stack when stack is not full is called ..... Operation and deletion of item from the stack, when stack is not empty is called .....operation.

A) push, pop

B) pop, push

C) insert, delete

D) delete, insert

14. Given the following fragmented C++ program

```
struct student
{
    char name[30];
    float marks;
};
main ( )
{
    struct student *student1;
    struct student student2;
    student1 = &student2;
    cin>>student1->name; // cin>>(*student1).name;
    cin>>student2.marks;
    cout<<(*student1).name<<" : " << student2.marks;
}
```

Which of the following is not true?

A. The name of the structure is student.

B. The instance of the structure is student1 and student2.

C. The data members of the structure are **name** and **marks**.

D. `cout<<student1->marks;` is equivalent to `cout<<(*student1).marks;`

E. none of the above

15. The average Big O notation of quick sort is-----

A.  $O(n^2)$

B.  **$O(n \log n)$**

C.  $3n+1$

D. None

16. "Make a pass across the data looking for the largest item, swap the largest with the last item in the array" is the strategy of :

A. **Selection sorting**

B. Bubble sorting

C. Quick sorting

D. Insertion sorting

17. Linked list are not suitable data structure of which one of the following problems?

[A] Insertion sort

**[B] Binary search**

[C] Radix sort

[D] Polynomial manipulation

18. The number of possible ordered trees with three nodes A, B, C is?

[A] 16

**[B] 12**

[C] 6

[D] 10