

PLUS TWO COMPUTER SCIENCE

UNIT TEST 1

QUESTIONS AND ANSWERS

1. Structure is a _____ data type.

Ans: User Defined

2. Assume that x is given a memory location at address 1000. Choose the correct output for the below program segment.

```
float    x=4.5,*ptr;  
ptr=&x;  
cout<<ptr++<<"\t";  
cout<<++ptr;
```

Ans: 1000 1004

3. Calculate the memory requirement for the following structure variable s1.

```
struct    student  
{  
    int    rno;  
    char    name[25];  
    float    height;  
}s1;
```

Ans: 33 bytes

4. Choose the right answer from the list.

Which is the structure member operator? (* ? + .)

Ans: .

5. State True or False. "Self referential structure can be used for implementing linked list".

Ans: True

6. Write the declaration statement of a student structure variable named 's' which is initialized with admission number 20, name as 'Suresh' and mark as 65.

Ans: `student s={20, "Suresh", 65};`

7. Write a function definition to swap values of two integer variables using pointer.

Ans: `void swap(int *a, int *b)`

```
{  
  
    int *temp;  
  
    temp = a;  
  
    a = b;  
  
    b = temp;  
  
}
```

7. Consider the array declaration. Assume that the first element of array is stored in location 2020. Predict the output and justify.

```
int a[]={2,5,8,9,4}, *p1,*p2;  
p1=a;  
p2=&a[0];  
cout<<p1<<"\t"<<p2;
```

Ans: 2020 2020

Array name itself is a pointer which stores address of first element of an array.

9. Differentiate between static and dynamic memory allocation with an example.

Ans: Dynamic memory allocation during program execution and static memory allocation during program compilation.

```
int a[10];           static array  
int * a= new int[10]; dynamic array.
```

10. What are nested structures?

Ans: A structure inside another structure or a structure variable declared inside another structure is called nested structure.

11. Define a structure to represent employee details. Employee details are employee code, employee name, date of joining and place of employee.

```
Ans: struct Employee{  
    int empcode;  
    char empname[25];  
    struct doj{  
        int day;  
        int month;  
        int year;  
    }  
    char place[25];  
};
```

12. Raju used four new operators and three delete operators in a program. Name the situation that he is going to face and explain the situation.

Ans: Memory leak. Each and every memory locations allocated using new operator should be de allocated after its usage. Otherwise it will cause memory leak.

13. Explain the type of structure defined below and calculate the number of bytes required (in GCC) to store the structure variable s1.

```
struct student  
{  
    int rno,mark;  
    char name[25];  
    struct date  
    {  
        int dd,mm,yy;  
    }doj;  
}s1;
```

Ans: Nested structure. 45 bytes

14. Write C++ statement for the following:

- i) To declare an integer variable named x using new operator.
- ii) To initialize the integer pointer variable x with value 5.
- iii) To declare a dynamic array of ten integers named x .

Ans: a) `int *x=new int;`
b) `int *x=new int(5);`
c) `int *x=new int[10];`

15. "The dot(.) operator cannot be used for accessing structure member by using structure pointer variable". Say True or False. Justify your answer.

Ans: True. Arrow (->) operator is used for accessing structure member by using structure pointer variable.