

END SEMESTER EXAMINATION : MARCH 2023**SEMESTER 2 : INTEGRATED M.Sc. PROGRAMME COMPUTER SCIENCE****COURSE : 21UP2CRMCP04: OBJECT ORIENTED PROGRAMMING USING C++***(For Regular - 2022 Admission and Improvement / Supplementary - 2021 Admission)*

Time : Three Hours

Max. Weightage: 30**PART A****Answer Any 8 Questions**

1. If 'Benz' is an object of class 'car', identify a few data members of the class.
2. State any one advantage of function overloading.
3. Define the term 'member function'.
4. Identify the error in the following declaration:

```
struct time{
    int hrs, min;
}
time t1;
```
5. Give examples of any two operators that cannot be overloaded.
6. Predict the output of the following code:

```
class Sample{
public : int x;
        Sample() { }
        valueofx() { cout << x; }
};
main(){
Sample S;
S.valueofx();
}
```
7. The operator function has ----- return type.
8. Define wild pointers in C++.
9. The default visibility mode of a base class when no visibility mode is specified is -----.
10. Find the output of the following code:

```
class base{
    int a;
    public: int b;
    void getdata() { cin >> a; }
    void putdata() { cout << a; }
};
class derived : public base{
    int p;
    public : int q; };
main(){
    derived obj;
    cout << sizeof (obj); }
```

(1 x 8 = 8 Weight)

PART B
Answer Any 6 Questions

11. Write short notes on enumerations in C++.
12. Write the code segment to print the following pattern using `for` loop.

```
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

13. Differentiate between a structure and a class.
14. Identify the error(s) in the following program:

```
struct room{
    int width, length;
    void setvalue (int w, int l){
        width = w; length = l;
    }
};
main(){
    room r;
    r.setvalue(12, 1, 4);
}
```

15. Predict the output of the following code:

```
class A{
    public: A() { cout<<"Constructor A \n"; }
           ~ A() { cout<<"Destructor A \n"; }
};
class B{
    public: B() { cout<<"Constructor B \n"; }
           ~ B() { cout<<"Destructor B \n"; }
};
class C {
    public: C() { cout<<"Constructor C \n"; }
           ~ C() { cout <<"Destructor C \n"; }
};
main(){
    C c;
    { A a; }
    B b;
}
```

16. Distinguish between the following statements, assuming that `time` is the name of a class:
`time T1 (13, 10, 25);`
`time T1 = time (13, 10, 25);`
17. Discuss the implications of the following two definitions:
`class B: virtual A { //....};`
`class C : virtual public A { //... };`
18. Discuss briefly about hierarchical inheritance.

(2 x 6 = 12 Weight)

PART C
Answer Any 2 Questions

19. Give a detailed note on logical and bitwise operators in C++.
20. Write a program to illustrate how objects can be returned from functions.
21. Write a program to overload different types of constructors.
22. Write a program to implement hierarchical inheritance.

(5 x 2 = 10 Weight)