END SEMESTER EXAMINATION - APRIL 2025
SEMESTER 2 - INTEGRATED M.Sc. PROGRAMME COMPUTER SCIENCE - DATA SCIENCE
COURSE : **21UP2CRMCP04 - OBJECT ORIENTED PROGRAMMING USING C++**
(For Regular 2024 and Improvement / Supplementary 2023/2022/2021 Admissions)

Time : Three Hours   Max. Weightage: 30

PART A
Answer any 8 Questions

1. Operator overloading implements an important concept of Object-oriented programming called ------------------.

2. Define an abstract class.

3. Define the term 'token' in a programming language.

4. ------------------ function is used to automatically destroy objects.

5. Identify errors in the following code fragment:
```
class F {
  int g;
  public : void readit () { cin >> g; }
};
class G : public F {
  public: void test () { g -- ; }
};
```

6. Runtime polymorphism can be implemented in C++ by using ------------------.

7. Identify the error in the following declaration:
```
struct time{
    int hrs, min;
}
time t1;
```

8. In the following code, examine whether the variable `var` can be accessed inside the class. If so, write the statement to print the value of variable `var` in the following class:
```
int var = 100;
class Sample{
    public: void showVal(){
                  //code
            }
};
```

9. State the advantage of passing arguments by reference to a function.

10. Conversion from a basic type to class type may be acheived using ---------------.
(1 x 8 = 8 Weight)

PART B
Answer any 6 Questions

11. Discuss briefly about hierarchical inheritance.

12. Discuss the significance of default arguments in a function.

13. Discuss the signficance of nesting the member functions.

14. Define friend functions. List the properties of a friend function.

15. List the various rules for overloading operators.

16. Write short notes on enumerations in C++.

17. Correct the errors in the following program:
```cpp
class test{
    int m;
    public: void getdata() { cin >> m; }
            void display() { cout << m; }
};
main() {
    test T;
    T -> getdata();
    T -> display();
    test *p = new test;
    p.getdata();
    (*p).display();
}
```
18. Discuss the importance of destructors in an object-oriented program.

(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 show the use of virtual functions.

21. Write an object oriented program to show the working of static member functions

22. Write a C++ program that converts a class type variable to another class type variable using constructors.

(5 x 2 = 10 Weight)