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DMI-ST.EUGENE UNIVERSITY  
DEGREE EXAMINATION – JANUARY 2023

SEM: IV      351CS44 OBJECT ORIENTED PROGRAMMING WITH C++

Time: 3 Hours

Max. Marks: 100

Answer any Five questions (5 x 20 = 100 Marks)

1. a) List FOUR benefits of Object-oriented programming. (4 Marks)  
b) Distinguish between Polymorphism and encapsulation. (4 Marks)  
c) Describe THREE types of declarative programming paradigm. (12 Marks)
2. a) State FIVE types of users defined data types. (5 Marks)  
b) Write the OUTPUT of the following fragment of the program code.  

```
Int num1=10, j;  
while (num1>5)  
    {j=num1%2;  
      If (j==0)  
        Cout<< num1*10;  
        Cout << \n;  
      else  
        Cout <<num1+11;  
        Cout <<\n;  
      Num1--  
    } (5 Marks)
```

  
c) Write a program C++ to find the largest number if the user enters three numbers num1, num2 and num3. (10 Marks)
3. a) With the example of C++ statements explain function overloading. (5 Marks)  
b) Explain copy constructor in C++ and write the syntax. (5 Marks)  
c) Write a C++ program with the class Students and the member variables Reg.No and Name, for the students register number and name of student respectively. The class should have a default constructor to initialize the values of the object stud1 and the values of the object stud2 both of class Students. The program should display the Reg.No and Year of the objects stud1 and stud2. (10 Marks)
4. a) Explain inheritance in C++ with an example. (10 Marks)  
b) Explain ambiguity in multiple inheritance and write the program to correct it. (5 Marks)

- c) Describe function overriding in C++ inheritance. (5 Marks)
5. a) Explain the use of the following functions in C++ file processing.
- (i) Open ( )
  - (ii) Close ( ) (4 Marks)
- b) Describe the THREE types of file access in C++ file processing. (6 Marks)
- c) Write a program to read and display the contents of a text file. (10 Marks)
6. a) State FIVE types of variables. (5 Marks)
- b) Write the output of the following program.

```
#include <iostream>
#include <iomanip>
using namespace std;
int main() {
    int i
    x = 49,y = 29; g=1;
    while (g > 0) {
        g= x % y
        cout <<g << endl;
            x = y;
            y = g;
    }
    return 0; (10 Marks)
```

- c) Write a program that will print numbers. (5 Marks)
7. a) Describe at least three type of functions used in a C++ class. (6 Marks)
- b) Describe copy constructor and write the syntax. (4 Marks)
- c) Write a C++ to calculate the area of a shape in which private member variables are initialized by a parameterized constructor. The program should have the class Shape with private member variables length and width. And the constructor shape() and the function displayArea() to calculate and display the area of the shape. (10 Marks)