

Roll No. ....

Total Pages : 03

BT-3/D-23

43141

OBJECT ORIENTED PROGRAMMING  
PC-CS-203A

Time : Three Hours]

[Maximum Marks : 75

**Note :** Attempt *Five* questions in all, selecting *one* question from each Unit I to Unit IV. All questions carry equal marks.

**Unit I**

1. What do you mean by Namespaces ? Explain containers, iterators and algorithms as important part of C++ standard library. Discuss the uses of C++ in GUI based applications.

15

2. (a) What are abstract classes ? Discuss the use of public, private and protected access specifiers and their visibility in the class.
- (b) Reusability of classes is one of the major properties of OOP. How is it implemented in C++ ? 8+7=15

**Unit II**

3. (a) Write a C++ program to calculate sum of distance and display the result using friend function.

- (b) How is constructor different from the member function ? Discuss default constructor and parameterized constructor with the help of an example in C++. 8+7=15
4. (a) Discuss the role of access specifiers in inheritance and show their visibility when they are inherited as public, private and protected.
- (b) What is the need of inheritance ? Discuss Multiple inheritance in context of Object Oriented Programming. How do you override base class members in derived class ? 8+7=15

### Unit III

5. (a) State any *four* points of differentiation between compile time polymorphism and run time polymorphism.
- (b) Differentiate between static and dynamic binding.
- (c) State rules for virtual function. Explain the reason for making a class virtual with the help of example. 5+5+5=15
6. (a) What is the need of overloading operators and functions ? Discuss rules for operator overloading.
- (b) Write a C++ program to demonstrate the overloading of a unary operator. 8+7=15

## Unit IV

7. What is a stream ? Draw a neat and clean sketch to show the different streams available in C++. Give syntax of and explain various functions related to ifstream and ofstream classes: seekp(), getline(), hide(), tell(). **15**
8. (a) When do we need multiple catch blocks for a single try block ? Give an example. Also write down the scenario where we require user defined exceptions ?
- (b) Write a C++ program using function template to find the product of two integer or floating point type of data. **8+7=15**