BT-3/D-20   **43160**

OBJECT ORIENTED PROGRAMMING
USING C++
PC-IT-207A

Time : Three Hours]   [Maximum Marks : 75

Note : All questions in Part A and Part B are compulsory. Attempt *Four* questions from Part C selecting *one* question from each Unit.

Part A

1. (i)   What is an abstract class ?   **3**

     (ii)   What is the difference between containership and inheritance ?   **3**

     (iii)   What is the application of scope resolution operator :: in C++ ?   **3**

     (iv)   What is the difference between class and struct ? **3**

     (v)   What is copy constructor ? What is the use of it ? Discuss.   **3**

Part B

2. What is the difference between private and protected members of a class ?   **5**

3. What is the difference between method overloading and overriding ? Discuss using suitable examples. **5**

4. What is a pure virtual function ? What are the implications of making a function a pure virtual function ? **5**

5. A class template is known as a parameterized class. Comment. **5**

Part C

Unit I

6. What do you understand by object oriented programming ? What are its advantages over procedure oriented programming ? Discuss the characteristic features of object-oriented approach. **10**

7. What do you understand by reusability ? How does it help in reducing the cost of software and improving its quality ? Discuss the features avaialble in C++ to support reusability. **10**

Unit II

8. What is the advantage of operator overloading ? Define a class string and overload the == operator to compare two strings. **10**

9. Write an object oriented program in C++ to compute the area of a triangle, a rectangle and a circle using function overloading. **10**

Unit III

10. Write an object oriented in C++ to count the frequency of different vowels in a sequential file. **10**

11. What is a random access file ? Write a program to create the random access file and illustrating the use of randomly accessing the data for read/write purpose. **10**

Unit IV

12. What do you understand by generic programming ? What is a function template ? Write a function template for sorting arrays of various types. **10**

13. What is an exception ? When do we use multiple catch handlers ? How is an exception handled in C++ ? Write a program to demonstrate the concept of rethrowing an exception. **10**