Roll No. ..... Total Pages : 04

BT-3/D-20 **43134**

OBJECT ORIENTED PROGRAMMING

PC-CS-203

Time : Three Hours] [Maximum Marks : 75

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

Part A

1. (a) What are inline functions ?

(b) What is throwing an exception ?

(c) What is the use of new operator ?

(d) What does polymorphism mean in C++ language ?

(e) Under what circumstances overloading using friend function becomes necessary ? **5×3=15**

Part B

2. Explain controlling access function and utility function with example. **5**

3. Why is the "assignment" operator function not inherited ? Explain. **5**

4. What are destructors ? When are they called and what is their utility ? **5**

5. Create a template for bubble sort function. **5**

Part C

Unit I

6. (a) What is a class ? What is the relation between an object and a class ? Write a program which shows how to define a class, how to access member functions and how to create and access objects in C++ ? **6**

(b) Which operator is used to access a class member with respect to pointer ? **4**

7. (a) What do you mean by type conversion ? Give an example of basic to object conversion. **5**

(b) What is the difference between early binding and late binding in C++ ? **5**

Unit II

8. (a) Why should the formal arguments of a copy constructor be a reference object ? **5**

(b) What is Inheritance ? How does inheritance influence the size and functionality of derived class objects ? **5**

9. Under what conditions does the dynamic memory allocation become mandatory ? Explain with example. **10**

Unit III

10. Overload the "addition" operator for the string so that it adds two strings and return the result. **10**

11. Explain the concept of Virtual and Pure Virtual Functions with the help of examples. When do we make a virtual function "pure" ? What are the implications of making a function a pure virtual function ? Explain. **10**

Unit IV

11. (a) Write a program to update the contents of file using random access. **5**

(b) What is a Template ? Explain with the help of an example, how to create a function template and a class template. **5**

13. What is exception handling ? Which three keywords are provided in C++ for implementing exception handling ? What are the limitations of exception handling in C++ ? **10**