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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**

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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**

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   (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**

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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**