Sixth Semester B.E. Degree Examination, June-July 2009
Object Oriented Programming with C++

Time: 3 hrs.   Max. Marks:100

Note:1. *Answer any FIVE full questions.*
     2. *The programs should be accompanied by the expected outputs.*

1 a. Explain the following terms:
      i) Encapsulation   ii) Polymorphism   iii) Inheritance.   **(09 Marks)**
   b. Briefly explain the various C++ data types with examples.   **(07 Marks)**
   c. Explain the new and delete operators with examples.   **(04 Marks)**

2 a. Explain the necessity for using functions.   **(04 Marks)**
   b. Explain with examples the three methods of passing parameters to functions. **(12 Marks)**
   c. Explain the concept of command line arguments.   **(04 Marks)**

3 a. What is function overloading? Explain with an example program.   **(10 Marks)**
   b. Explain the meaning of generic function with a suitable example program.   **(10 Marks)**

4 a. What are classes and objects? Explain.   **(05 Marks)**
   b. Explain the properties of constructors and destructors.   **(05 Marks)**
   c. Design a class to represent complex numbers in rectangular form having at least two
      constructors and destructors. Provide methods to display and add. Demonstrate the working
      of the class with a main program.   **(10 Marks)**

5 a. Explain the concept of friend functions with a suitable example program.   **(10 Marks)**
   b. What are static data members of a class? Explain with a suitable example program.
                                                                                 (10 Marks)

6 a. Explain the terms: scope resolution operator, 'this' pointer.   **(05 Marks)**
   b. What is the meaning of operator over loading? List the operators, which cannot be
      overloaded.   **(06 Marks)**
   c. With a suitable program, explain how to overload the binary addition operator. **(09 Marks)**

7 a. Explain the concept of multilevel inheritance with a suitable program. The classes should
      have constructors.   **(12 Marks)**
   b. What are abstract classes? Explain with a suitable example.   **(08 Marks)**

8 a. What are virtual functions? Explain with a suitable program.   **(10 Marks)**
   b. Explain with a suitable program how to overload the output operator <<.   **(10 Marks)**

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