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Fourth Semester B.E. Degree Examination, December 2011

Object Oriented Programming with C++

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. Explain the different features of object oriented programming. (10 Marks)
- b. What is 'This' pointer? Explain its significance, with an example. (05 Marks)
- c. Explain function overloading, with examples. (05 Marks)
- 2 a. Define the terms classes and objects, with examples. (05 Marks)
- b. Write a C++ program to define a class called cuboide with length, breadth and height as data members and input(), output(), volume(), and surface_area() as member functions. (10 Marks)
- c. Explain how Namespace enables the C++ programmer to prevent pollution of global Namespace. (05 Marks)
- 3 a. Explain how 'new' and 'delete' operators manage the memory allocation / deallocation dynamically, with example. (08 Marks)
- b. What are constructors and destructors? What are their characteristics? Explain different types of constructors. (12 Marks)
- 4 a. What is inheritance? Explain the different types of inheritance, with suitable diagrams. (10 Marks)
- b. Explain the function overriding, with an example. (04 Marks)
- c. Write a C++ program to initialize base class members through derived class constructors. (06 Marks)

PART – B

- 5 a. What is virtual function? Explain the mechanism of virtual function. (08 Marks)
- b. Explain with a neat diagram, the class hierarchy for handling streams in C++. (08 Marks)
- c. Explain the pure virtual function, with syntax. (04 Marks)
- 6 a. Explain the different error handling flags and function, with respect to files. (08 Marks)
- b. What is operator overloading? What are the rules to be followed while overloading? (08 Marks)
- c. Give the prototype and the usage of setw() and setfill() IO manipulator function, with an example. (04 Marks)
- 7 a. Create a class 'Time', with data members hours and minutes as integers, use appropriate constructors to initlize data members, overload the operator +, -, << and >> for adding subtracting, output and input operation. (10 Marks)
- b. List the operators that can not be overloaded. Overload the 'new' and 'delete' operator for allocation/ deallocation of memory for single and array of objects. (10 Marks)
- 8 a. What is RTTI? Explain with examples, different types of new style casts in C++. (08 Marks)
- b. What is a function template? Write a C++ program to implement array representation of Queues for integer and float, using template classes. (12 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

