COMP 4 – 6 (RC)

S.E. (Comp.) (Semester – IV) (Revised 07-08)
Examination, Nov./Dec. 2012
OBJECT ORIENTED PROGRAMMING AND DESIGN USING C++

Duration : 3 Hours

Total Marks : 100

*Instructions : 1) **Assume** suitable data **if** necessary.*
*2) Answer **five** questions by answering atleast **one** question from **each** Module.*
*3) Draw **neat** diagrams **if** required.*
4) Write question numbers legibly while answering.
5) Solve problems with appropriate assumptions if required.

MODULE – I

1. a) Write a C++ program to overhead " -- " operator as post decrement and pre decrement operator. 6
   b) Explain inheritance. What is the role of constructors and destructors in derived class. 5
   c) Explain the use of vtable in dynamic binding with the help of example. 6
   d) For each of the following write single statement that performs the indicated task. 3
      i) Print 200 with and without sign
      ii) Print 1234 right justified in a 10 digit field
      iii) Print 1.92, 1.925, 1.9258 separated by tabs using a stream manipulator to change base.
2. a) Write a C++ program to implement multilevel inheritance. 6
   b) Explain the different stream error states. 4
   c) When do we use protected visibility specifier to class member ? Explain with example. 6
   d) Differentiate between : 4
      i) Virtual Functions and Pure Virtual Functions.

MODULE – II

3. a) Explain function template. What do you mean by function template specialization ? 4
   b) Write a C++ program for creating random access file and reading data from it. 8
   c) Write a C++ program to handle array out of bounds exception. 8

P.T.O.

4. a) Class templates are called parameterized types. Justify your answer giving example. 6
   b) Give a key advantage and key disadvantage of using catch (...). 4
   c) Differentiate between sequential file and random access file. 4
   d) Explain non type parameters and default type for class templates with examples. 6

MODULE – III

5. a) Write a short note on STL components explaining each of them in brief. 6
   b) Write a program to illustrate vector sequence container. 8
   c) Write a C++ program to convert C-style char strings to C++ strings. 6
6. a) Explain the following : 6
      i) # error
      ii) # pragma
      iii) # define.
   b) What is string stream processing ? Write a program illustrating the use of class istringstream. 8
   c) Write a program to simulate all operations of stack adapter. 6

MODULE – IV

7. a) Explain the following with respect to class with the help of examples : 8
      i) Association
      ii) Qualified association
      iii) Dependency
      iv) Derived properties.
   b) Explain the concept of composition with respect to class diagrams. Give an example. 6
   c) Write a note on package diagrams. 6
8. a) Draw a class diagram for College Administrative System. Assume necessary information. 8
   b) Explain in UML development process outline. 7
   c) Write a short note on Rational Unified Process. 5