COMP 4 – 6 (RC)

S.E. (Comp.) (Semester – IV) Examination, November 2010
OBJECT ORIENTED PROGRAMMING AND DESIGN USING C++
(Revised 2007-08)

ation : 3 Hours Total Marks : 100

Instructions : *1) Answer **any five** questions by selecting **at least one** from **each** Module.*
*2) **Make** suitable assumptions **if** required.*

MODULE – I

a) Write a note on overloading '– –' as a pre-decrement and post decrement operator. Give an examples. **6**

b) Distinguish between : **6**

i) Virtual functions and Pure virtual functions

ii) Abstract base classes and concrete classes.

c) Write a C++ program that converts integer Fahrenheit temperature from 0 to 212 degree to floating point Celsius temperature with 3 digits of precision.

Use the formulae :

Celsius = 5.0/9.0* (Fahrenheit-32) to perform calculations.

The output should be printed in two right justified columns and Celsius should be preceded by a sign for positive and negative values. **8**

a) Consider a BOOK SHOP which sells both BOOKS and VIDEO TAPES. Create a class known as MEDIA that stores titles and price of a publication. Also create two derived classes one for storing the number of pages in a book and another for storing the playing time of a tape. Write a C++ program that uses display () function in all classes to display the calls contents. Use concept of polymorphism. **10**

P.T.O.

b) Explain the following functions with an example :

i) read()

ii) ignore() 5

c) What is inheritance ? Write a note on constructors and destructors in derived classes. 5

MODULE – II

3. a) Write a C++ program to perform 'linear search' on integers and floating point numbers using template functions. 8

b) Write a C++ program to input numbers in an array and handle exception if user tries to access array "out of bound". 6

c) Explain the following :

i) Reading from a file

ii) Writing to a file. 6

4. a) Explain the following with examples :

i) Templates and Friends

ii) Templates and Static members. 8

b) Give the difference between an error and an exception. 4

c) A file contains list of telephone numbers and names. Write an interactive menu driven C++ program that will access the file and implement the following task - Determine the telephone number of the specified person. 8

MODULE – III

5. a) Explain the use of # and # # operator with example. 4

b) Write a C++ program that counts the number of occurrence of a particular character say 'C' in a line of text. 6

c) Write a note on algorithms with respect to STL. 4

d) Write a program to illustrate

push_front, push_back, begin, end and display on a deque sequence container. 6

Write a C++ program that uses macro AREA to find the area of circle. Input the values from keyboard. **5**

What are container adapters ? Write a program to simulate all operations of queue adapter. **8**

What are strings ? Explain the following functions with respect to strings with examples :

i) replace()

ii) rfind()

iii) substr() **7**

MODULE – IV

Draw a Use Case diagram for an ATM System. **6**

Explain the concept of Aggregation with respect to class diagrams. Give an example. **6**

What are the advantages of UML for object modeling ? **3**

Write a note on Use Case Relationships. **5**

Draw a class diagram for Library Management System. Assume necessary information. **8**

Explain the UML Development Process Outline. **7**

Write a note on Package diagrams. **5**
