ROLL NO. _____

Code: CS23 Subject: OBJECT ORIENTED PROGRAMMING USING C++

ALCCS – OLD SCHEME

Time: 3 Hours **FEBRUARY 2012** **Max. Marks: 100**

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE:

- **Question 1 is compulsory and carries 28 marks. Answer any FOUR questions from the rest. Marks are indicated against each question.**
- **Parts of a question should be answered at the same place.**

Q.1 a. What is object oriented programming? Explain.

b. Explain the difference between struct and class in terms of Access Modifier.

c. What is the difference between realloc() and free()?

d. What is a copy constructor? When is it called?

e. What is the need for a Virtual Destructor?

f. Give the hierarchy of I/O streams classes in C++.

g. Explain under what circumstances the following statement would be used:
(i) Throw;
(ii) void fun1(float x) throw()
(iii) Catch(…) **(7×4)**

Q.2 a. What is a dangling pointer? Explain with the help of example. **(9)**

b. Define inheritance. What are the different types of inheritance? Explain each type with suitable example(s). **(9)**

Q.3 a. Define inline function with an example. Compare inline function with macros. **(9)**

b. Describe Exception handling mechanism in C++ for a class with an example. **(9)**

Q.4 a. Define a class to represent a bank account. In the class, include the following members: Data members: name of the depositor, account number, type of account, and balance amount in the account. Member functions: to assign initial values, to deposit an amount, to withdrawal an amount after checking the balance, and to display the name and balance. Write main() code to test your class? **(6)**

b. Write a program to perform read and write operation in binary file. **(7)**

c. Compare Multiple Inheritance with Multilevel Inheritance giving suitable example. **(5)**

Q.5 a. Define virtual function with example? Why do we need virtual function? When do we make virtual function "Pure"? What are the implications of making a function a pure virtual function? **(9)**

b. Explain this pointer with example. What are the applications of this pointer? **(9)**

Q.6 a. Explain four key features of object-oriented approach giving suitable real-life example(s). **(8)**

b. Write a program to overload binary operator * using friend function, to perform multiplication of integer with a vector. **(10)**

Q.7 a. Write a template class in C++ that create a queue of integers or string or float. Also write a member function that displays the items. **(9)**

b. Explain Friend function with the help of a suitable example. What are the merits and demerits of using Friend function? **(9)**