Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA -Integrated SEMESTER– IV • EXAMINATION – SUMMER 2015

Subject Code:4440601 **Date: 11/05/2015**

Subject Name:C++ with Class Libraries

Time:10:30 am to 1:00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** Answer the following: **07**

(i) State the operator in C++ which is used for dynamic memory allocation.

(ii) Can we overload a destructor? State your answer with proper reason (no reason no marks).

(iii) What is pure virtual function?

(iv) What is the advantage of making a function inline?

(v) Which type of function is used to overload assignment operators?

(vi) State the namespace in which "cout" is specified.

(vii) State the function which is used to get the current position of the "get" file pointer while reading a file.

(b) Answer the following:

(i) Explain the features of Object Oriented Programming in brief. **04**

(ii) Explain the need and use of "this" pointer in C++. **03**

Q.2 **(a)** What is a friend function? Explain the need for creating a friend function along with appropriate example. **07**

(b) What is a constructor? Describe various types of constructors along with appropriate example. **07**

OR

(b) What is operator overloading? Explain different ways of overloading unary and binary operators along proper example. **07**

Q.3 **(a)** What is user-defined type conversion? Explain the mechanism of class to class conversion in detail. **07**

(b) What is a template in C++? Explain the use of class template and specify the syntax of creating a class template. **07**

OR

Q.3 **(a)** Design a template in C++ to create a function that would search an element in an array of generic type. **07**

(b) What is STL? Explain various components of STL in brief. **07**

Q.4 **(a)** What is inheritance? Explain various types of inheritance using appropriate block diagram and syntax. **07**

(b) Define dynamic polymorphism. How is it different from static polymorphism? Explain with appropriate example. **07**

OR

Q.4 **(a)** What is virtual base class? Explain the need for creating a virtual base class along with appropriate example. **07**

(b) What is RTTI? Explain in detail the need and mechanism for RTTI. **07**

Q.5	**(a)**	What is a namespace? What is the need for creating namespaces in C++? Explain different ways for accessing elements of a namespace along with appropriate example.	**07**
	(b)	Write a short note on the exception handling mechanism available in C++.	**07**

OR

Q.5	**(a)**	Design a manipulator called "MyFormat" that would print a number left aligned in a width of 10 characters and blank spaces padded with '$'. It should show a "+" sign for positive numbers, and have two digits after decimal point.	**07**
	(b)	Write a program in C++ to concatenate the contents of a text file at the end of another text file.	**07**

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