Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA – Integrated SEMESTER-IV • EXAMINATION – WINTER 2015

Subject Code:4440601 **Date:01/12/ 2015**

Subject Name: C++ with Class Libraries (CPP)

Time:02.30 pm to 05.00 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)** Fill in the blanks. **07**

1) Protecting data from access by unauthorized functions is called _____.
2) Bundling data and functions together is called _____.
3) _____ header file must be included to use setw and endl.
4) Member functions defined inside a class specifier are _____ by default.
5) A constructor having a reference to an instance of its own class as an argument is known as _____.
6) A function whose declaration exists in a base class and implementation in derived classes are called _____.
7) _____ data member of a class is shared by all the instances of the class.

(b) Answer the following. **03**

1) State whether the following statements are true or false? Justify your answer.
   i. A private member can be accessed by member functions in its own class or in any class derived from its own class.
   ii. The abstract class is often defined as one that will not be used to create any objects, but exists only to act as a base class of other classes.
   iii. The C++ compiler would not object if you overload the * operator to perform division.
2) Define the following object oriented terminologies. **04**
   i. inline function
   ii. polymorphism
   iii. MIL
   iv. Abstract class

Q.2 **(a)** 1) Compare structured programming with object oriented programming. **03**

2) What is reference data type? Explain with example. **04**

(b) 1) Explain the need of static function for a class with suitable example. **03**

2) What is the purpose of local class? Explain with proper example. **04**

OR

(b) Design Money class with two data members with 3 different constructors. Once value is not passed assign data members with default value zero. Overload operator + which will do summation of 2 Money objects and return answer as Money object. **07**

Q.3 **(a)** What are the problems of using macros? How does template helps in this? Explain with example. **07**

	(b)	Explain virtual base class with suitable example.	**07**
		OR	
Q.3	**(a)**	Explain friend function importance with example.	**07**
	(b)	What is virtual destructor? Explain its importance. Can we have virtual constructor? Justify your answer.	**07**
Q.4	**(a)**	What is constructor? Explain Default constructor, Parameterized constructor, Copy constructor with suitable example.	**07**
	(b)	Differentiate between compile-time and run-time polymorphism. How run-time polymorphism can be achieved in C++?	**07**
		OR	
Q.4	**(a)**	What is file mode? Describe various file modes. Explain the use of functions seekg(), seekp(), tellg(), tellp().	**07**
	(b)	What do you mean by exception? Explain exception handling mechanism in C++. Describe uncaught_exception().	**07**
Q.5	**(a)**	Explain the manipulators with example. Explain user defined manipulator.	**07**
	(b)	Explain the namespace and its importance with suitable example. Can we have unnamed namespace?	**07**
		OR	
Q.5	**(a)**	1) Describe error handling functions for file management in C++.	**03**
		2) Describe functions for string reading from stream.	**04**
	(b)	How User Defined Type conversion is achieved in C++? Explain in detail with suitable example.	**07**

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