Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA – SEMESTER – II • EXAMINATION – SUMMER - 2016

Subject Code: 2620002   **Date: 26-05-2016**
Subject Name: Object Oriented Programming Concepts and Programming
Time: 10.30a.m. To 01.00p.m.   **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 following questions in brief	**07**
		I What do you mean by reference variable?	
		II What does it mean by function signature?	
		III What is the use of abort( ) function?	
		IV What does it mean by function overriding?	
		V What is object?	
		VI What is the difference in using sizeof operator in C and C++ ?	
		VII What does it mean by instantiation ?	
	(b)	1. What do you mean by default arguments in a function? Explain with example.	**03**
		2. What is dynamic memory allocation? Explain all operators used for dynamic memory allocation with suitable example.	**04**
Q.2	**(a)**	Explain private member function and constant member function with suitable example.	**07**
	(b)	What is constructor? Why it is used? Explain all types of constructor with example.	**07**
		OR	
	(b)	1. Write short note on friend function	**04**
		2. Define : Data Encapsulation, Data Hiding & Data Abstraction	**03**
Q.3	**(a)**	Why it is required to overload operators for class? Overload at least one arithmetic operator and one relational operator by taking a suitable example.	**07**
	(b)	Why to use exception handling? Explain exception handling mechanism. Also demonstrate with example : rethrowing an exception.	**07**
		OR	
Q.3	**(a)**	Why type conversion is required for class? Demonstrate basic to class type and class type to basic type conversion with suitable example.	**07**
	(b)	1. Explain with example : multiple catch blocks to handle an exception. Also show the use of catch(…) block.	**04**
		2. Explain nesting of namespace with example.	**03**
Q.4	**(a)**	What is the invocation order of constructors and destructors in case of multiple inheritance? Give suitable example.	**07**
	(b)	1. What do you mean by compile time polymorphism? Explain with example.	**04**
		2. Write a function template for bubble sort function so it can work for all basic numeric types.	**03**
		OR	

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Q.4 **(a)** What is Ambiguity error in multiple inheritance? Which are the various ways to solve it? – explain with example. **07**

(b) 1. Explain pure virtual function and abstract class. **04**

2. What is container in STL? List all its type with at least one example. **03**

Q.5 **(a)** Draw file stream class hierarchy. Explain all open mode bits for opening files in various mode in C++. **07**

(b) Define class template Stack that supports int, float, double and Item data types. Define all member functions to manage stack. Item class contains itemID, unitPrice,Qty member data and necessary member functions. **07**

OR

Q.5 **(a)** What do you mean by random access of a file? Explain read( ), write( ), seekg(), tellg(), seekp() and tellp() functions. **07**

(b) 1. Explain with example : User defined manipulator. **03**

2. Write short note on cast operators. **04**

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