Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. - SEMESTER – IV • EXAMINATION – WINTER 2012

Subject code: 140704 **Date: 31/12/2012**

Subject Name: Object Oriented Concepts and Programming (Institute Elective – 1)

Time: 02.30 pm - 05.00 pm **Total Marks: 70**

Instructions:

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

Q.1	**(a)**	Explain object oriented methodology and themes.	**07**
	(b)	Define the following terms. 1. Pointer to object 2. this pointer 3. pure virtual function 4. abstract class 5. Destructor 6. call by reference 7. virtual base class	**07**
Q.2	**(a)**	Explain function modeling with example.	**07**
	(b)	What is a constructor? Explain types of constructor with example.	**07**
		OR	
	(b)	Attempt following Questions. 1. Explain Aggregation v/s Generalization. 2. Explain Data flow diagram.	**07**
Q.3	**(a)**	What do you mean by links and association? What is multiplicity? Explain with example.	**07**
	(b)	Write a program using a function with arguments to swap the values of a pair of integers using call by reference.	**07**
		OR	
Q.3	**(a)**	Define class and object. Draw an object model of a windowing system.	**07**
	(b)	Explain Inline function and Function overloading with the help of an example.	**07**
Q.4	**(a)**	Create a class time that has hh, mm, ss as data members and void gettime (int, int, int) and void puttime () as member function. Create a Member function sum (time, time) to sum two time objects.	**07**
	(b)	Explain event and state. Draw the state diagram for phone call.	**07**
		OR	
Q.4	**(a)**	Explain a friend function with example and List some of the special properties of the friend function.	**07**
Q.4	**(b)**	What is a virtual function? Write rules for virtual function. Explain with example.	**07**
Q.5	**(a)**	What does inheritance mean in c++? What are different forms of inheritance? Give an example for each.	**07**
	(b)	Define operator overloading. Explain how to overload unary operator and binary operator.	**07**
		OR	
Q.5	**(a)**	What is object oriented programming? Explain features of object oriented programming language.	**07**
	(b)	What is type conversion? Explain the type conversion from basic type to class type and from class type to basic type with proper example.	**07**

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