

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. **07**
1. Pointer to object
 2. this pointer
 3. pure virtual function
 4. abstract class
 5. Destructor
 6. call by reference
 7. virtual base class
- 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. **07**
1. Explain Aggregation v/s Generalization.
 2. Explain Data flow diagram.
- 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**
