Seat No.: _____ Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**BE - SEMESTER–IV • EXAMINATION – WINTER 2013**

**Subject Code: 140704** **Date: 30-12-2013**

**Subject Name: Object Oriented Concept and Programming**

**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.**

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|---|---|---|---|
| **Q.1** | **(a)** | Explain Three Models and their relationship in detail. | **07** |
| | **(b)** | What is the use of friend function? Write characteristics of friend function and also explain with proper example. | **07** |
| **Q.2** | **(a)** | Answer following questions.<br>(1) Difference between Object Oriented Programming and Procedure Oriented Programming.<br>(2) Explain Private member function. | **07** |
| | **(b)** | Explain Object Oriented Methodology with its five stages. | **07** |
| | | **OR** | |
| | **(b)** | Write a scenario for a session with an online stock-broker. Draw sequence diagram for same. | **07** |
| **Q.3** | **(a)** | Explain link and association with multiplicity. | **07** |
| | **(b)** | Write a C++ Program to overload unary minus operator using member function and friend function. | **07** |
| | | **OR** | |
| **Q.3** | **(a)** | Explain aggregation with respect to object model with example. | **07** |
| | **(b)** | Write a C++ program to overload Binary plus operator using friend function. | **07** |
| **Q.4** | **(a)** | What is state diagram? Draw State Diagram for buying beverage (drink) from vending machine. | **07** |
| | **(b)** | What is constructor? Write characteristics of constructor. Explain parameterized constructor with proper example. | **07** |
| | | **OR** | |
| **Q.4** | **(a)** | Draw data-flow diagram for banking system. | **07** |
| | **(b)** | What is polymorphism? Write types of polymorphism. Explain run time polymorphism with virtual function. | **07** |
| **Q.5** | **(a)** | Explain Virtual Base class in inheritance with proper program. | **07** |
| | **(b)** | Explain static variable and static function. | **07** |
| | | **OR** | |
| **Q.5** | **(a)** | Explain single and multiple inheritances with proper program. | **07** |
| | **(b)** | Answer following questions.<br>(1) Explain Scope resolution operator.<br>(2) Explain memory management operator. | **07** |

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