

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- IVth SEMESTER-EXAMINATION – MAY/JUNE- 2012****Subject code: 140704****Date: 31/05/2012****Subject Name: Object Oriented Concepts and Programming****Time: 10:30 am – 01:00 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) Define the following terms. **07**

- 1> Link
- 2> Association
- 3> Class
- 4> Event
- 5> Qualification
- 6> Action
- 7> Metadata

(b) Describe Three models and relationship between them in detail. **07**

Q.2 (a) Draw diagram for the following statement which indicate some relationship. **07**

- 1> Country has capital.
- 2> Computer assembled from CPU, keyboard, Mouse.
- 3> Printer and keyboard are input/output device.
- 4> Dinning philosopher uses forks.
- 5> Teacher teaches subjects to the students.
- 6> Person works for company.
- 7> Triangle has three points.

(b) Write a program using function with arguments to swap the values of a pair of integers. **07**

OR

(b) Write a program to print Fibonacci series of N number. **07**

Q.3 (a) Draw data flow diagram for banking system. **07**

(b) Write a scenario for the following activity **07**

- 1> An elevator ride to the top floor
- 2> Withdraw money from ATM.

OR

Q.3 (a) Prepare object diagram showing relationships among the following object classes. Include associations, aggregations, generalizations, qualified associations, multiplicity balls, association names where needed. As you prepare the diagram you may add additional object classes. **07**

Object classes are:

School, Playground, Principal, School board, Class room, book, Student, Teacher, Cafeteria, Rest room, Computer, Desk, Chair, Ruler, Door, Swing, Library

(b) Draw state diagram for phone call system. **07**

- Q.4 (a)** Explain features of object oriented programming language. **07**
- (b)** Attempt following questions. **07**
- 1> Explain function prototyping with example.
 - 2> Explain Memory Management Operator with example.
- OR**
- Q.4 (a)** Attempt following questions **07**
- 1> Explain State generalization.
 - 2> Explain Object Oriented Methodology
- (b)** Attempt following questions. **07**
- 1> Explain function overloading with example.
 - 2> Explain Friend function with example.
- Q.5 (a)** Attempt following questions **07**
- 1> Describe inline function in C++ with example.
 - 2> Differentiate Aggregation and Generalization.
- (b)** Explain following: **07**
- 1> Call by reference.
 - 2> Private, Public and Protected access modifiers.
- OR**
- Q.5 (a)** Write down different form of inheritance and describe them in detail **07**
- (b)** Explain Constructor and Destructor in C++. **07**
