Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–IV • EXAMINATION – WINTER • 2014

Subject Code: 140703   **Date: 29-12-2014**

Subject Name: Object Oriented Analysis Design and UML

Time: 02:30 pm - 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.**

Q.1	**(a)**	Which different purposes are served by Models? Explain all three models which are required to describe the complete system.	**07**
	(b)	List out the steps of preparing domain class model. What are the criteria for identifying right classes?	**07**
Q.2	**(a)**	What do you mean by an event in state diagram? Discuss various types of events.	**07**
	(b)	Explain 'ordered', 'bags', 'sequences' in class diagram with suitable examples.	**07**

OR

	(b)	Define following Terms: Aggregation, Abstract Class , Generalization, Reification, Constrains, Metadata, Package	**07**
Q.3	**(a)**	What is the purpose of one shot state diagram? What is the difference between continuous loops or one shot life cycle State diagrams? Draw the one shot diagram for the chess Game.	**07**
	(b)	Prepare an activity diagram for computing a restaurant bill. There should be a charge for each delivered items. The total amount should be subject to tax and a service charge of 18% for groups of six or more. For smaller groups, there should be a blank entry for a gratuity according to the customer's discretion. Any coupons or gift certificates submitted by the customer should be subtracted.	**07**

OR

Q.3	**(a)**	What is concurrency? Explain 'aggregation concurrency' and 'concurrency within an object' represented by state model with suitable example.	**07**
	(b)	Prepare a use case diagram and sequence diagram for an online airline reservation system.	**07**
Q.4	**(a)**	Explain Nested States. Draw the Nested states diagram for a phone line.	**07**
	(b)	Prepare object diagram showing at least 10 relationships among the following object classes. Include associations and qualified associations, aggregations, generalizations, and multiplicity. You may add additional objects. Also show attributes and operations. Disc, file system, file, track, ASCII file, binary file, directory file, drive, sector	**07**

OR

Q.4	**(a)**	What do you mean by object-orientation? Briefly discuss the characteristics of OO approach.	**07**
	(b)	What is a constraint? Explain constraints on objects, constraints on generalization sets and constraints on links.	**07**
Q.5	**(a)**	What tasks are involved in design optimization?	**07**
	(b)	Define Library and Patterns. Describe qualities of "good" class libraries.	**07**

OR

Q.5	**(a)**	What is inheritance? List the different types of inheritance and explain how it encourages reusability and sharing.	**07**
	(b)	Explain various steps required for Class Design.	**07**

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