	Seat No.: Enrolment No		_
GUJARAT TECHNOLOGICAL UN		GUJARAT TECHNOLOGICAL UNIVERSITY	
		M.E –IIst SEMESTER–EXAMINATION – JULY- 2012	
	Sul	bject code: 1720105 Date: 10/07/20	12
	Sul	oject Name: Object Oriented Methodology & Design	
	Tin	ne: 10:30 am – 13:00 pm Total Marks:	<b>70</b>
	Ins	structions:	
		1. Attempt all questions.	
		2. Make suitable assumptions wherever necessary.	
		3. Figures to the right indicate full marks.	
Q.1	(a)	Define the following	07
		i) Aggregation ii) Discriminator iii) States iv) Event v) Activity vi) Actor vii)Sheet	
	(b)	Prepare a class diagram for an interactive diagram editor. A sheet is collection of	07
	(6)	lines and boxes. A line is series of line segments that connect two boxes. Each line	07
		segment is specified by two points. A point may be shared by a vertical and a	
		horizontal line segment in the same line. A selection is a collection of lines and	
		boxes that have been highlighted. A buffer is collection of lines and boxes that have	
		been cut or copied from the sheet. Use generalization to express constraint by	
Q.2	(a)	creating a super class for the classes buffer, selection and sheet. Discuss its merits. Consider a software system for supporting checkout of materials at a public library.	07
Q.2	(a)	i) List four actors. Explain the relevance of each actor.	07
		ii) Explain use case to borrow library item.	
		iii) Prepare sequence diagram for library checkout system.	
	<b>(b)</b>	Explain the state diagram for phone line with activities.	<b>07</b>
		OR	^ <b>=</b>
	<b>(b)</b>	Discuss the activity diagram for computing a restaurant bill. There should be a charge for each delivered item. The total amount should be subject to tax and service	07
		charge of 18% for groups of six or more.	
Q.3	(a)		07
	( )	modeling.	
	<b>(b)</b>	Prepare a data flow diagram for computing volume and surface of area of cylinders.	<b>07</b>
		Inputs are height and radius of cylinders.	
0.2	(-)	OR	07
Q.3	(a)	Consider a situation where a library wants to add a feature that enables the librarian to print out a list of all the books that have been checked out at a given point in time.	07
		Construct a sequence diagram for this use case.	
	<b>(b)</b>	A hotel reservation system supports the following functionality: room reservation,	07
	. ,	customer check-in, customer check-out. Prepare system use cases for the above	
		functionality.	
<b>Q.4</b>	(a)	What are the distinguishing features of Singleton design pattern. How the	<b>07</b>
	<b>(b)</b>	subclassing of singletons implemented?  Abstract factory pattern different from simple factory pattern. Justify your answer	07
	<b>(b)</b>	with proper example.	U/
		OR	
<b>Q.4</b>	(a)	Develop a simple factory example for any case example. Discuss its applicability.	07
<b>Q.4</b>	<b>(b)</b>	Explain standard Swing object Model and show the LookAndFeel Object in Swing	<b>07</b>
c -		Object model with its associated swing object.	^-
Q.5	(a)	Explain finite state modeling for microwave oven.	07
	<b>(b)</b>	How the observer pattern useful in microwave oven design.  OR	07
Q.5	(a)	What is MVC architectural pattern and also discuss the benefits of MVC pattern.	07
2.0	(b)	Assume we have library system as desktop application. For deploying the library	07
		system on the world wide web list out the essential system and user interface	
		requirements.	

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