GUJARAT TECHNOLOGICAL UNIVERSITY
BE- SEMESTER–V (NEW) EXAMINATION – WINTER 2020

Subject Code:3151604   **Date:27/01/2021**
Subject Name:Object Oriented Analysis and Design
Time:10:30 AM TO 12:30 PM   **Total Marks: 56**

Instructions:
1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

			MARKS
Q.1	(a)	What is the purpose of design optimization?	03
	(b)	Discuss the difference between multiplicity and cardinality?	04
	(c)	Explain Object Oriented Model, Dynamic Model, Functional Model and Interaction Model & Relation among these models.	07
Q.2	(a)	What is an event? Explain types of events.	03
	(b)	What is the purpose of class modeling? Explain aggregation versus association example.	04
	(c)	List all kinds of control information represented by Dynamic model. Prepare State chart diagram for Two Party Phone Call.	07
Q.3	(a)	What is concurrency? Explain aggregation concurrency.	03
	(b)	Prepare a class diagram for group of classes. Sink, freezer, refrigerator, table, light, switch, window, smoke alarm, burglar alarm, cabinet, bread, cheese, ice, door, kitchen.	04
	(c)	What is software development process? Enlist steps of software development process? Differentiate iterative process model from waterfall model.	07
Q.4	(a)	Define Model. Briefly discuss its purposes.	03
	(b)	How does Object-Oriented Software Development achieve and improve reusability?	04
	(c)	Briefly explain following characteristics and themes of object oriented systems: Classification, identity, inheritance, encapsulation, polymorphism, sharing, synergy.	07
Q.5	(a)	Discuss data storage management in system design	03
	(b)	What does one shot diagram represent? Show one shot diagram for chess game.	04
	(c)	Prepare sequence diagram for booking a train ticket on-line.	07
Q.6	(a)	Explain refactoring with respect to class design.	03
	(b)	Explain methods of breaking system into subsystems to system design.	04
	(c)	Describe the criteria for discarding unnecessary and incorrect classes. Give example to justify the answer.	07
Q.7	(a)	Explain nested states with appropriate diagram.	03
	(b)	Explain sequence diagram with suitable diagram.	04
	(c)	List out the decisions you make during system design and briefly explain the objectives of following: i)frame works ii) patterns iii) libraries ii) layers iii) partition	07

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Q.8 **(a)** Differentiate active, passive and transient object in sequence diagram. **03**

(b) Explain 'concurrency within an object' represented by state model with suitable example. **04**

(c) "Iterative development life cycle is better than the waterfall development life cycle." Explain with Example. **07**