Seat No.: _____ Enrolment No._____

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**

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**