

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE – SEMESTER- V EXAMINATION-SUMMER 2023****Subject Code: 3151604****Date: 26/06/2023****Subject Name: Object Oriented Analysis and Design****Time: 02:30 PM TO 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.
4. Simple and non-programmable scientific calculators are allowed.

		<b>MARKS</b>
<b>Q.1</b>	(a) What is Object-Oriented Analysis and Design?	<b>03</b>
	(b) Discuss the difference between multiplicity and cardinality?	<b>04</b>
	(c) Explain Following Terms: a) Identity b) Classification c) Polymorphism d) Metadata e) Abstraction f) Encapsulation	<b>07</b>
<b>Q.2</b>	(a) What is concurrency? Explain aggregation concurrency.	<b>03</b>
	(b) What is model? Explain types of models.	<b>04</b>
	(c) What is inheritance? List the different types of inheritance and explain how it encourages reusability and sharing.	<b>07</b>
	<b>OR</b>	
	(c) Differentiate Association, Generalization and Aggregation with example.	<b>07</b>
<b>Q.3</b>	(a) What is an event? Explain types of events.	<b>03</b>
	(b) Explain nested states with appropriate diagram.	<b>04</b>
	(c) Prepare sequence diagram for booking a Bus ticket on-line.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Differentiate active, passive and transient object in sequence diagram.	<b>03</b>
	(b) Why Call a Domain Model a "Visual Dictionary"?	<b>04</b>
	(c) Prepare a use case diagram for an online shopping system.	<b>07</b>
<b>Q.4</b>	(a) Explain methods of breaking system into subsystems to system design.	<b>03</b>
	(b) Explain Development Lifecycle in detail.	<b>04</b>
	(c) Explain how to choose a Software Control Strategy.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Explain the tasks involved in design optimization.	<b>03</b>
	(b) Compare and contrast waterfall and iterative development life cycle model.	<b>04</b>
	(c) Explain Architecture of the ATM system.	<b>07</b>
<b>Q.5</b>	(a) Explain refactoring with respect to class design.	<b>03</b>
	(b) List and explain the steps of constructing application interaction model.	<b>04</b>
	(c) Differentiate following with respect to analysis and design stages:	<b>07</b>

- i) Domain analysis vs. Application analysis
- ii) System design vs. Class design

**OR**

- Q.5**
- (a) How to Identifying Concurrency in System Design? **03**
  - (b) Explain the steps for preparing a problem statement. **04**
  - (c) List out the decisions you make during system design and briefly explain the objectives of following: **07**
    - i) frame works
    - ii) patterns
    - iii) libraries
    - ii) layers
    - iii) partition

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