

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2021****Subject Code:3151604****Date:01/01/2022****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.

		Marks
<b>Q.1</b>	(a) What is object-orientation? Why model is required in analysis and Design?	<b>03</b>
	(b) Define the purpose of following terms with suitable example (i) Aggregation (ii) Multiplicity	<b>04</b>
	(c) Which different purposes are served by Models? Explain all three models which are required to describe the complete system.	<b>07</b>
<b>Q.2</b>	(a) What is a qualified association?	<b>03</b>
	(b) Explain constraints in details.	<b>04</b>
	(c) Define Terms: (1) Abstract class (2) Association class (3) Multiple inheritance (4) Polymorphism (5) Metadata (6) Derived data (7) Package	<b>07</b>
<b>OR</b>		
(c)	Prepare a use case diagram for an online railway reservation system.	<b>07</b>
<b>Q.3</b>	(a) Explain Concurrency within object.	<b>03</b>
	(b) List and explain different types of events.	<b>04</b>
	(c) Explain ordered, bags, sequences in class diagram with example each.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) Explain Link and Association Concepts.	<b>03</b>
	(b) Define the purpose of following terms with its notations. i) state ii) transition iii) event iv) guard condition	<b>04</b>
	(c) Prepare sequence diagram for booking a train ticket on line. Also Prepare sequence diagram for booking a train ticket on line that fails.	<b>07</b>
<b>Q.4</b>	(a) Explain process development stages.	<b>03</b>
	(b) How synchronization of concurrent activities can be done in state modeling?	<b>04</b>
	(c) Which steps are required to construct an “Application Interaction Model”? Discuss in detail.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) Explain Domain state model.	<b>03</b>
	(b) Give me the steps for preparing a problem statement	<b>04</b>
	(c) Explain how to choose a Software Control Strategy	<b>07</b>
<b>Q.5</b>	(a) How to breaking a system into subsystems.	<b>03</b>
	(b) Define the purpose of following terms with its notations. i) swimlane ii) use case generalization iii) activity i) effect	<b>04</b>
	(c) Explain how to choose a Software Control Strategy	<b>07</b>
<b>OR</b>		
<b>Q.5</b>	(a) Explain how to prepare a reuse plan	<b>03</b>
	(b) Differentiate between System design vs. Class design.	<b>04</b>
	(c) Explain Architecture of the ATM system.	<b>07</b>