

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2024

**Subject Code:3151604**

**Date:28-11-2024**

**Subject Name: Object Oriented Analysis and Design**

**Time:10:30 AM TO 01:00 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.

- Q.1** (a) Explain the structural things in UML. **03**  
(b) Discuss various uses of object diagram. **04**  
(c) What is object orientation? Explain OO themes. **07**
- Q.2** (a) What is a qualified association? **03**  
(b) What is Class Diagram? Give benefits of Class Diagram. **04**  
(c) Define Terms: (1) Abstract class (2) Association class (3) Multiple inheritance **07**  
(4) Polymorphism (5) Metadata (6) Derived data (7) Package
- OR**
- (b) Explain Inheritance with examples. **07**
- Q.3** (a) Explain in brief System Analysis. **03**  
(b) Explain State diagram with example. **04**  
(c) Explain Application Interaction Model with Example. **07**
- OR**
- Q.3** (a) Explain Static Binding. **03**  
(b) How to Identifying Concurrency in System Design? **04**  
(c) Prepare a use case diagram for Library management system. **07**
- Q.4** (a) What are the different aspects to handle Boundary Conditions? **03**  
(b) Explain Association Classes. **04**  
(c) Explain Development life cycle. **07**
- OR**
- Q.4** (a) Differentiate Aggregation and Composition. **03**  
(b) Explain Refactoring and Reification terms in relation to class design. **04**  
(c) Explain how to choose a Software Control Strategy. **07**
- Q.5** (a) Explain Domain state model. **03**  
(b) What is Multiplicity? Explain with example. **04**  
(c) Prepare domain class model for hospital management system. **07**
- OR**
- Q.5** (a) Explain following terms. **03**  
(1) Frameworks (2) Patterns (3) Layers  
(b) Differentiate between System design vs. Class design. **04**  
(c) Explain Architecture of the ATM system. **07**

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