

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**MCA INTEGRATED– SEMESTER III- EXAMINATION –SUMMER-2024**

**Subject Code: 2638603****Date: 27/05/2024****Subject Name: Structured and Object Oriented Analysis and Design****Methodology****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. Use of simple calculators and non-programmable scientific calculators are permitted.

- Q.1** (a)(I) Explain basic symbols used in Data Flow Diagrams **03**  
 (II) Explain components of Activity diagram in brief **04**  
 (b) What are the key phases involved in the Software Development Life Cycle , **07**  
 and elaborate on each phase individually?
- Q.2** (a) Explain decision trees with an example, and also provide a brief overview of **07**  
 how decision tables work along with suitable example?  
 (b) Draw the Use Case Diagram for What's App Application. **07**
- OR**
- (b) Explain various fact-finding techniques with suitable examples. **07**
- Q.3** (a) Create a context-level and a 0-level Data Flow Diagram (DFD) for a Library **07**  
 Management  
 (b) Explain the types of user interfaces in detail **07**
- OR**
- Q.3** (a) What are classes and objects, and could you explain the concept of a Class **07**  
 Diagram with a suitable example?  
 (b) Explain the seven sections of a form in input design in detail? **07**
- Q.4** (a) Explain the building blocks of the Unified Modeling Language? **07**  
 (b) Give brief explanation of a data dictionary. **07**
- OR**
- Q.4** (a) Explain Generalization, Association, and Composition in UML (Unified **07**  
 Modeling Language) with examples  
 (b) Explain Normalization in detail. **07**
- Q.5** (a) Write explanation of forking, joining, and object flow in an activity diagram, **07**  
 accompanied by examples to clarify each concept?  
 (b) What are the primary types of diagrams in UML, explain the structural and **07**  
 behavioral diagram of UML?
- OR**
- Q.5** (a) What is Use Case diagram? Compare include and extend relationship of Use **07**  
 Case diagram with suitable example.  
 (b) Explain what an Interaction diagram is, and then discuss Structured Controls in **07**  
 a Sequence diagram?

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