

Enroll No

K.E. Society's
Rajarambapu Institute of Technology, Rajaramnagar
 (An Empowered Autonomous Institute, affiliated to SUK)
Unit Test -II (2025-26)

Q.P. Code
UT 3125

T.Y. B.Tech.-Information Technology (Open Elective-I)
Course Code: OE361 Course Name: Object Oriented Modeling and Design

Day & Date: Friday 19/09/2025

Time: 10.30AM-11.30AM

Max Marks- 25

- Instructions:**
- 1) All questions are compulsory.
 - 2) Figures in rounded () brackets within the question, indicate the scheme of marking for respective part of the question, whereas, figures in the first right column indicate total marks for that whole question.
 - 3) CO is the index number of the Course Outcome statement.
 - 4) The Bloom's taxonomy level (BL) for 1,2,3,4,5 and 6 is remember, understand, apply, analyze, evaluate and create respectively.
 - 5) Assume suitable data if necessary.
 - 6) Use of non-programmable calculators is allowed

		Marks	BT Level	COs
Q.1	A	6	2,3	3
	State phases of OMT (1M) and models of OMT (1M). Apply the phases of OMT to model a Library Management System. Identify how each phase contributes. (4M)			
	OR			
		6	2,3	3
	Design a Class Diagram for an ATM Transaction Management System (2M). Describe phases and models of OMT related to it (4M).			
B		6	3	3
	Differentiate between Structured Analysis and Design Methodology (SADM) and Object-Oriented Methodology (OOM) based on the following aspects (each aspect 1M):			
	<ol style="list-style-type: none"> 1. Focus 2. Main Models 3. Data vs. Behavior 4. Reusability 5. Maintainability 6. Best suited for 			
Q.2	A	7	4	3
	Define Relationship and state its various types (2M). Draw the UML diagram for University Management system by considering following scenario (5M):			
	<ol style="list-style-type: none"> 1. Classes and Attributes <ul style="list-style-type: none"> • Professor (profID, name, dept) • Student (studentID, name) • GraduateStudent (thesisTitle) → inherits Student • UndergraduateStudent (year) → inherits Student • Course (courseID, courseName, credits) 			



- Department (deptID, deptName)

2. Relationships

- Association:
 - Professor — teaches —> Course (1. *).
 - Student — registers —> Course (*... *).
- Generalization:
 - GraduateStudent → Student
 - UndergraduateStudent → Student
- Dependency:
 - Course → depends on → Department

B Define packages in UML (1M). Design a UML Package Diagram for the subsystem that clearly shows packages, their relationships (5M). 6 2,4 3

Packages: UserManagement, CourseCatalog, Enrollment, Assessment, Notifications.

- UserManagement contains classes: User, Student, Instructor, Admin.
- CourseCatalog contains classes: Course, Module, Prerequisite and an interface ICatalogService.
- Enrollment contains classes: Enrollment, Waitlist and it depends on UserManagement and CourseCatalog.
- Assessment contains classes: Assignment, Quiz, Grade and uses Enrollment package
- Notifications contains class NotificationService

OR

State various structural (3M) and behavioral modelling diagrams in UML (3M). 6 3 3

