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**PRESIDENCY
UNIVERSITY
BENGALURU**

School of Computer Science and Engineering
Mid - Term Examinations - November 2024

Semester: V

Date: 07/11/2024

Course Code: CSE3082

Time: 02.00pm to 03.30pm

Course Name: Object Oriented Analysis and Design

Max Marks: 50

Program: B.Tech

Weightage: 25%

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks.

5Qx2M=10M

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|---|---|---------|----|-----|
| 1 | Define objects and class? | 2 Marks | L1 | C01 |
| 2 | What is the primary purpose of UML? | 2 Marks | L1 | C01 |
| 3 | Identify the symbol used to represent an actor in a use case diagram. | 2 Marks | L1 | C02 |
| 4 | Define a 'class' in the context of a class diagram. | 2 Marks | L1 | C02 |
| 5 | What is an 'attribute' in a class diagram? | 2 Marks | L1 | C02 |

Part B

Answer ALL Questions. Each question carries 10 marks.

4QX10M=40M

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|---|--|--------|----|-----|
| 6 | a. What is the Rumbaugh Object Model? | 2Marks | L1 | C01 |
| | b. Explain the main components of the Rumbaugh Object Model and how they interact. | 3Marks | L2 | C01 |
| | c. Discuss how the principles of the Rumbaugh Object Model can be applied to design a class diagram for an ATM Transaction System. | 5Marks | L3 | C01 |

Or

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|---|-------------------------------------|--------|----|-----|
| 7 | a. Define the Jacobson Methodology. | 2Marks | L1 | C01 |
|---|-------------------------------------|--------|----|-----|

	b.	Describe how the Jacobson Methodology incorporates use cases in the software development process. What is their role in identifying system requirements?	3Marks	L2	C01
	c.	Discuss how the principles of the Jacobson methodology can be applied to enhance the object-oriented design of a software system. Provide specific examples to illustrate your points.	5Marks	L3	C01
8	a.	List the four main principles of object-oriented programming.	2Marks	L1	C01
	b.	Discuss the role of inheritance in Object-Oriented Systems. How does it facilitate code reusability and enhance the design of a software application?	3Marks	L2	C01
	c.	Given a scenario where you need to develop a simple e-commerce application, outline the Use case diagram for the online shopping system with using uses and extends relationships.	5Marks	L3	C01
Or					
9	a.	What distinguishes the Unified Approach from other software development methodologies?	2Marks	L1	C01
	b.	Define static and dynamic modeling in the context of object-oriented design. How do they complement each other during the development process?	3Marks	L2	C01
	c.	Develop a use case diagram for an automated library system. Explain how the use case driven approach helps in identifying key actors and use cases for this system.	5Marks	L3	C01
10	a.	What is the Noun Phrase Approach in object-oriented analysis? Mention the guidelines to find Nouns using this approach.	5Marks	L2	C02
	b.	Explain how the Noun Phrase approach helps in identifying objects during the analysis phase of object-oriented design. Provide an example to demonstrate its application in analyzing a system.	5Marks	L2	C02
Or					
11	a.	Define the primary purpose of the Common Class Pattern approach and explain the patterns to find classes using this approach.	5Marks	L2	C02
	b.	Explain how the Common Class Pattern approach helps in identifying common patterns across various domains in object-	5Marks	L2	C02

oriented analysis with an example.

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|-----------|---|----------------|-----------|------------|
| 12 | a. Define CRC. Summarize the importance of defining responsibilities, collaborators when designing classes using the CRC card method. | 5 Marks | L2 | C02 |
| | b. Explain the CRC approach in object-oriented analysis. How does this technique aid in identifying classes and their interactions in library management system. | 5Marks | L3 | C02 |

Or

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|-----------|--|----------------|-----------|------------|
| 13 | a. Describe the use case driven approach for identifying classes. What advantages does this approach offer compared to traditional methods? | 5 Marks | L2 | C02 |
| | b. Draw a usecase diagram to capture the interactions between patients, doctors, administrators, and lab technicians. A hospital is building a management system to automate patient records, appointments, and billing. Patients should be able to book appointments, view their medical records, and receive billing details online. Doctors can access patient histories, update treatment plans, and review test results. Administrators will manage staff schedules, update patient records, and generate billing reports. The system should also allow lab technicians to upload test results for doctors and patients to view. | 5Marks | L3 | C02 |