SREENIVASA INSTITUTE of TECHNOLOGY and MANAGEMENT STUDIES
(autonomous)

OBJECT ORIENTED ANALYSIS AND DESIGN

Question bank

III - B.TECH / II - SEMESTER   **Regulation: R16**

SITAMS

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Department : **CSE**

SREENIVASA INSTITUTE OF TECHNOLOGY AND MANAGEMENT STUDIES

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

QUESTION BANK   **OBJECT ORIENTED ANALYSIS AND DESIGN (16CSE 324)**

III B. TECH II-SEMESTER (CSE)   **L   T   P   C**

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16CSE324   **OBJECT ORIENTED ANALYSIS AND DESIGN USING UML**

Course Educational objectives:

CEO1:To study the importance and basics of Object Oriented modeling.
CEO2: To Study the notations of Unified Modeling Language.
CEO3:To identify, analyze, and model structural and behavioral concepts of the system.
CEO4:To model the event driven state of object and transform them into implementation specific layouts.
CEO5:To analyze and design solutions to problems using object oriented approach

UNIT -1: Introduction To OOM

Elements of Object Model - Classes and Objects - Nature of object - Relationships among objects - Nature of a Class - Relationship among Classes - Interplay of Classes and Objects - Importance of Proper Classification - Identifying Classes and Objects - Key abstractions and Mechanisms.

UNIT -2: Introduction To Uml

Why we model - Conceptual model of UML - Architecture - Classes - Relationships - Common Mechanisms - Class diagrams - Object diagrams.

UNIT -3: Structural And Behavioral Modeling

Advance Classes - Advanced Relationships - Interfaces - Types &Roles - Packages - Interactions - Usecases - Usecase diagrams.

UNIT -4: Advanced Behavioral And Architectural Modeling

Activity diagrams - Events and Signals - Statechart diagrams - Components and Component diagrams - Deployment and Deployment diagrams.

UNIT -5: Case Studies

Analysis and Design of Library management system - Online Railway reservation system using object oriented approach-Banking application-ATM System.

Course Outcomes:

On Successful completion of this course the students will be able to:

Course Outcomes		POs related to COs
CO1	**Find solutions to the complex problems using object oriented approach**	**PO1**
CO2	**Represent classes, responsibilities and states using UML notationand model structural concepts of the system.**	**PO1, PO3**
CO3	**Model behavioral concepts of the system and analyze and document the requirements through use case driven approach**	**PO1, PO2**
CO4	**Apply the concepts of architectural design for**	**PO1, PO4**

	deploying the code for software.	
CO5	**Perform Analysis and Design of application systems**	**PO1, PO2, PO4**

Text Books:

1. Object- Oriented Analysis and Design with Applications, 2/e, Grady Booch, 2007,Pearson Education, New Delhi, India.

2. The Unified Modeling Language User Guide, 2/e, Grady Booch, James Rumbaugh and Ivar Jacobson, 2005,Pearson Education, New Delhi, India.

Reference Books:

1. **Fundamentals of Object Oriented Design in UML, 1/e, Meilir Page, Jones, 1999,Pearson Education, India.**
2. **Modeling Software Systems Using UML2, 1/e, Pascal Roques, 2010,WILEYDreamtech India Pvt. Ltd.**
3. **Object Oriented Analysis & Design,1/e, AtulKahate, 2004,TheMcGrawHill Companies, Hyderabad, India.**
4. **Practical Object Oriented Design with UML, 2/e, Mark Priestley, 2005,TATA McGraw Hill, Hyderabad, India.**
5. **Object-Oriented Analysis and Design with Applications 3/e, Grady Booch, Robert A. Maksimchuk, Michael W. Engle, Bobbi J. Young, Jim Conallen, Kelli A. Houston,2007,Pearson Education, India.**

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Question No.	QUESTION BANK	PO Attainment
	Questions	
	UNIT – 1: Introduction To OOM	
	PART-A (Two Marks Questions)	
1	What is Object Oriented Analysis?	PO1
2	What is Object Oriented Design?	PO1
3	What is an Object?	PO1
4	List the elements of object model.	PO1
5	Define class with neat sketch.	PO1
6	Define Classification.	PO1
7	Define key abstraction.	PO1
8	Define mechanism.	PO1
9	Define association relationship.	PO1
10	Define dependency relationship.	PO1
11	Define generalization relationship.	PO1
12	State the adornments that are applied to association.	PO1
13	What is the main advantage of object oriented development?	PO1
14	Define persistence.	PO1
15	Specify the kinds of operations performed on an object.	PO1
16	Define CRC cards.	PO1
17	List the number of approaches for analysis that are relevant to object oriented system.	PO1
18	Define conceptual clustering.	PO1
19	Define domain analysis.	PO1
20	Define behavior	PO1
	PART-B (Ten Marks Questions)	
1	State and explain in detail about the elements of the object model.	PO1
2	Define object and explain about nature of object.	PO1
3	Define object and write about relationships among objects.	PO1
4	Define class and explain about nature of a class.	PO1

5	Define class and write about relationships among classes	PO1
6	Explain in detail about interplay of classes and objects.	PO1
7	Define classification and explain in detail about importance of proper classification.	PO1
8	State and explain in detail about key abstraction and mechanisms.	PO1
9	Discuss in detail about identifying classes and objects.	PO1
10	Define object oriented analysis and explain number of approaches for analysis.	PO1

Question No.	Questions	PO Attainment
	UNIT – 2: Introduction To Uml	
	PART-A (Two Marks Questions)	
1	Define UML.	PO1
2	Define the basic building of UML.	PO1
3	Explain the things in UML.	PO1
4	Classify structural things.	PO1
5	Classify behavioral things in UML.	PO1
6	Define grouping things.	PO1
7	State the goals of UML.	PO1
8	Define interaction	PO1
9	Describe Component.	PO1
10	Define annotational things.	PO1
11	Define usecase diagram.	PO1
12	Define node.	PO3
13	Explain about state machine.	PO3
14	Define package.	PO3
15	List the semantic rules of UML.	PO3
16	List the extensibility mechanisms in UML.	PO3
17	Specify the common uses of class diagram.	PO3
18	Specify the contents of object diagram.	PO3
19	State the common modeling techniques of class diagram.	PO3
20	Define deployment diagram.	PO3

PART-B (Ten Marks Questions)

No.	Question	PO
1	Why do we model? Explain in detail about principles of modeling.	PO1, PO3
2	Describe conceptual model of UML.	PO1, PO3
3	Explain in detail about behavioral and grouping things.	PO1, PO3
4	Explain different kinds of things in UML.	PO1, PO3
5	Describe in detail about diagrams in UML.	PO1, PO3
6	State and explain about common mechanisms in UML.	PO1, PO3
7	Describe the architecture of a software intensive system.	PO1, PO3
8	Explain in detail about classes and its common modeling techniques.	PO1, PO3
9	Explain in detail about class diagram and its common modeling techniques.	PO1, PO3
10	Explain in detail about object diagram and its common modeling techniques.	PO1, PO3

Question No.	Questions	PO Attainment
UNIT – 3: Structural And Behavioral Modeling	
PART-A (Two Marks Questions)	
1	What is the use of Self Message?	PO1
2	What is Narrow Cast Message?	PO1
3	List the common modeling techniques for advanced relationships.	PO1
4	Define association classes.	PO1
5	What do you meant by qualification?	PO1
6	Define composition.	PO1
7	Define types and role	PO1
8	List the common modeling techniques for interfaces.	PO1
9	List the common modeling techniques for packages.	PO1
10	What is meant by interactions?	PO1
11	Specify the common modeling techniques for interaction.	PO2
12	List the terms and concepts for use cases.	PO2
13	What is meant by flowevents.	PO2
14	Explain the common modeling techniques for use cases.	PO2
15	What are the common uses of use case diagram?	PO2
16	Specify the contents of use case diagrams.	PO2
17	What is meant by forward and reverse engineering?	PO2

18	List the common modeling techniques for use case diagrams.	PO2
19	Define visibility.	PO2
20	List the properties of attributes.	PO2
PART-B (Ten Marks Questions)		
1	With neat diagram explain about use case diagram.	PO1, PO2
2	Explain in detail about advanced classes.	PO1, PO2
3	Explain in detail about advanced relationships.	PO1, PO2
4	State and explain common modeling techniques for interfacs.	PO1, PO2
5	Discuss in detail about interfaces.	PO1, PO2
6	Explain in detail about packages.	PO1, PO2
7	Explain in detail about interactions.	PO1, PO2
8	Discuss in detail about interaction diagrams.	PO1, PO2
9	Draw the sequence and collaboration diagram for hospital management system.	PO1, PO2
10	Draw the use case diagram for library management system	PO1, PO2

Question No.	Questions	PO Attainment
UNIT – 4: Advanced Behavioral And Architectural Modeling		
PART-A (Two Marks Questions)		
1	What is signal?	PO1
2	Write short notes on internal events and external events.	PO1
3	Specify the contents of activity diagram.	PO1
4	What is meant by activity nodes?	PO1
5	Define swimlanes.	PO1
6	Write a short note on call events.	PO1
7	List the common modeling techniques for events and signals.	PO1
8	Define state machine.	PO1
9	Write a short note on state and its parts.	PO1
10	Define transition.	PO1
11	Define state chart diagram.	PO1

12	Specify the common properties and contents of state chart diagram.	PO1
13	Specify the kinds of components.	PO1
14	List the common modeling techniques for component.	PO1
15	Define component diagram.	PO1
16	Specify the common uses of component diagram.	PO1
17	List the common modeling techniques for component diagram.	PO1
18	List the common modeling techniques for deployment.	PO1
19	Define deployment diagram.	PO1
20	List the common modeling techniques for deployment diagram	PO1
PART-B (Ten Marks Questions)		
1	State and explain in detail about events and signals.	PO1,PO4
2	Explain common modeling techniques for component diagram.	PO1, PO4
3	Describe statechart diagram with suitable examples.	PO1, PO4
4	Explain terms, concepts and importance of component with suitable examples.	PO1, PO4
5	State and explain in detail about activity diagrams.	PO1, PO4
6	Explain in detail about state machine.	PO1, PO4
7	State and explain in detail about component diagrams	PO1, PO4
8	Explain in detail about state component diagram.	PO1, PO4
9	Explain in detail about deployment diagram.	PO1, PO4
10	Explain common modeling techniques for deployment diagram	PO1, PO4

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	UNIT – 5: Case Studies	
	PART-A (Two Marks Questions)	
1	Write short notes on tagged values.	PO1, PO2
2	List any two tools for modeling.	PO1, PO2
3	Draw a use case diagram for lending a book.	PO1, PO2
4	Identify the requirements for library management system.	PO1, PO2
5	Identify the requirements for online railway reservation system.	PO1, PO2
6	List out the various classes used in library management system.	PO1, PO2
7	List out the various classes used in online railway reservation system.	PO1, PO2
8	Mention the role of actors in library management system.	PO1, PO2
9	Mention the role of actors in online railway reservation system.	PO1, PO2
10	Assume a 'book' as a class in library management system, what are the necessary attributes and functions need to declare.	PO1, PO2
11	Draw a passenger class using UML notation.	PO1, PO2
12	Draw a use case for login function in library management system.	PO1, PO2
13	List out the various classes used in online railway reservation system.	PO1, PO2
14	List out the various classes used in library management system.	PO1, PO2
15	Draw a student class using UML notation.	PO1, PO2
16	Draw the deployment diagram for library management system.	PO1, PO2
17	Sketch a sequence diagram for borrow the book from library.	PO1, PO2
18	Sketch a sequence diagram for booking a ticket in online railway reservation system.	PO1, PO2
19	Draw the deployment diagram for online railway reservation system.	PO1, PO2
20	Give the difference between use case and sequence diagram	PO1, PO2
	PART-B (Ten Marks Questions)	
1	Draw use case, class and activity diagrams for library management system.	PO1,PO2,PO4
2	Draw class, activity and sequence diagrams for library management system.	PO1,PO2,PO4
3	Draw use case, collaboration and component diagram for online railway reservation system.	PO1,PO2,PO4

4	Explain the two interaction diagrams for "Issue of a book" and "Renewal of a book" operations in a library.	PO1,PO2,PO4
5	Draw a neat sketch of class diagram and use case diagram for online railway reservation system.	PO1,PO2,PO4
6	Draw a neat sketch of component diagram and sequence diagram for online railway reservation system.	PO1,PO2,PO4
7	Explain the two interaction diagrams for online railway reservation system.	PO1,PO2,PO4
8	Draw class, activity and sequence diagrams for online railway reservation system.	PO1,PO2,PO4
9	Draw class, activity and deployment diagrams for library management system.	PO1,PO2,PO4
10	Draw a neat sketch of component diagram and sequence diagram for library management system.	PO1,PO2,PO43

ALL THE BEST