Code No: R1941052 **R19** **Set No. 1**

IV B. Tech I Semester Regular Examinations, November – 2022
UML & DESIGN PATTERNS
(Computer Science and Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks
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UNIT-I

1	a)	Write the Importance of modeling. Give the features of object oriented modelling.	[10]
	b)	Describe principles of modeling	[5]
		(OR)	
2	a)	What are the various relationships used in UML? Summarize them.	[7]
	b)	Describe the common modelling techniques of class diagram.	[8]

UNIT-II

3	a)	What are the dependency relationships in use case? Explain with notations and examples?	[7]
	b)	What are the interaction diagrams? Briefly explain with examples	[8]
		(OR)	
4	a)	Define and differentiate the sequence diagram and system sequence diagram with example?	[7]
	b)	Design an Use case diagram for ATM withdrawal mechanism.	[8]

UNIT-III

5	a)	Write the Common modeling techniques for component diagram	[7]
	b)	How to use design patterns? Explain in detail	[8]
		(OR)	
6	a)	Explain about selection of a design pattern.	[7]
	b)	How a Design pattern solves the design problem? Illustrate with an example	[8]

UNIT-IV

7	a)	Explain the sample code of Flyweight pattern.	[7]
	b)	What are consequences of Builder pattern? Explain Builder pattern implementation	[8]

(OR)

8 a) Write sample code of Prototype pattern. [7]
b) Discuss about implementation issues of Decorator pattern [8]

UNIT-V

9 What is a chain of responsibility pattern? In what scenarios to apply this pattern? [15]

(OR)

10 What problem does Command pattern solve? What are the important roles in Command pattern? Explain [15]

Code No: R1941052 **R19** **Set No. 2**

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UML & DESIGN PATTERNS
(Computer Science and Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
ONE Question from Each unit
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*****

UNIT-I

1	a)	Discuss in detail about object oriented modeling	[7]
	b)	Discuss about UML artifacts and SDLC phases and how they can be mapped?	[8]
		(OR)	
2	a)	What is the relation between UML and OOAD? Describe.	[7]
	b)	Draw the class diagram for customer support system	[8]

UNIT-II

3	a)	Explain the sequence of steps for creating methods from interaction diagrams by taking an example.	[7]
	b)	Explain the use case diagram for a library management system.	[8]
		(OR)	
4	a)	Draw use case diagram for online shopping.	[7]
	b)	What are the goals and scope of a use case? How to identity a Use case?	[8]

UNIT-III

5	a)	Write the Common modeling techniques for deployment diagrams.	[7]
	b)	Give an account on MVC architecture with a neat diagram	[8]
		(OR)	
6	a)	Give an overview on component diagram. How is it different from deployment diagram?	[7]
	b)	How to select a design pattern? Illustrate with an example.	[8]

UNIT-IV

7	a)	What are the implementation issues of prototype design pattern? Discuss	[7]
	b)	With a neat diagram explain the motivation of Abstract Factory Method	[8]

(OR)

8 a) What is a Decorator design pattern? Give the steps to implement it. [7]
b) Explain the Motivation and Sample code Of Singleton design pattern. [8]

UNIT-V

9 a) Discuss the implementation issues of Strategy behavioral pattern. [7]
b) Can you alter the sequence of steps of any process with Template pattern? Justify. [8]

(OR)

10 a) What is Command Pattern? Describe in detail about structure, participants and collaborations of Command pattern. [7]
b) Explain the motivation and applicability of observer pattern. [8]

Code No: R1941052 **R19** **Set No. 3**

IV B. Tech I Semester Regular Examinations, November – 2022
UML & DESIGN PATTERNS
(Computer Science and Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks
*****

UNIT-I

1	a)	Write the basic building blocks of UML.	[7]
	b)	What are the UML diagrams? Explain them with notations and the relations ships used	[8]
		(OR)	
2	a)	Define association and aggregation among classes.	[7]
	b)	Describe Software Development Life Cycle with a neat diagram.	[8]

UNIT-II

3	a)	How do you identify states in a state chart diagram? Give an example.	[7]
	b)	Draw the sequence diagram for library management system?	[8]
		(OR)	
4	a)	What is generalization? Explain how it is used in use case model with an example	[7]
	b)	Design component and deployment diagrams for traffic management system.	[8]

UNIT-III

5	a)	Describe the consistent format for describing the design patterns.	[7]
	b)	Design Component and Deployment diagrams for Traffic Management system.	[8]
		(OR)	
6	a)	Write the differences between component and deployment diagrams.	[7]
	b)	What is the basis for classifying design patterns? Categorize and tabulate the design patterns.	[8]

UNIT-IV

7	a)	What are the two variations of the Adapter pattern? Explain them	[7]
	b)	The Singleton uses a special method to instantiate objects. What is special about this method?	[8]

(OR)

8 a) When can be a Flyweight pattern effectively be applicable? Explain. [7]
b) What are the different language features that are exploited by proxy pattern? [8]

UNIT-V

9 a) What to expect from design patterns? Explain. [7]
b) How the Broad cast communication is possible in Observer? Give appropriate code block. [8]

(OR)

10 a) Write about the implementation issues of memento pattern [7]
b) Explain about motivation of Mediator pattern [8]

Code No: R1941052 **R19** **Set No. 4**

IV B. Tech I Semester Regular Examinations, November – 2022
UML & DESIGN PATTERNS
(Computer Science and Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks
*****

UNIT-I

1	a)	Discuss in detail about advanced relationships. How to represent them?	[7]
	b)	Write the common modeling techniques for Object diagram.	[8]
		(OR)	
2	a)	What are the various types of UML diagrams drawn to handle static and dynamic component of software under development?	[7]
	b)	How to identify the attributes and relationships in a class? Explain with a suitable example.	[8]

UNIT-II

3	a)	What is an activity diagram? Explain how activity diagram focuses on flows driven by internal processing with the help of suitable example?	[7]
	b)	Draw a State chart Diagram for library management system.	[8]
		(OR)	
4		Draw use case diagram for ATM and state chart diagram.	[15]

UNIT-III

5	a)	Draw a component diagram for Library management system.	[7]
	b)	Discuss the artifacts to be identified for drawing component diagram.	[8]
		(OR)	
6	a)	Describe the Catalog of Design Patterns.	[7]
	b)	Draw a deployment diagram for Hospital management system.	[8]

UNIT-IV

7	a)	What problem does Builder pattern try to solve? Describe.	[7]
	b)	What is the intent and motivation of Facade pattern? Explain.	[8]

(OR)

8 a) Discuss in detail about the participants and consequences of Composite pattern. [7]

b) Can we use an abstract factory for supporting multiple window system in Lexi's design? Explain [8]

UNIT-V

9 a) What are the implementation issues to be considered in Chain of Responsibility pattern? Explain [7]

b) What are the difference between the Strategy pattern and the Template Method pattern? [8]

(OR)

10 a) Discuss about the structure and participants of Interpreter pattern. [7]

b) In what scenarios does one select a Strategy pattern? How does strategy pattern alter the runtime behavior? [8]