

**PRAGATI ENGINEERING COLLEGE: SURAMPALEM
(AUTONOMOUS)**

III B.Tech II Semester Regular/Supplementary Examinations, April - 2024

**OBJECT ORIENTED ANALYSIS AND DESIGN
(CSE)**

Time: 3 hours

Max. Marks: 70 M

**Answer ONE Question from each Unit
All Questions Carry Equal Marks**

Q. No.	Questions	BTL	CO	Marks
UNIT – I				
1.	a) Evaluate the system architecture of satellite-based navigation systems and identify the key components and functions of the system.	K2	CO1	7M
	b) Explain the role of software in satellite-based navigation systems and evaluate the challenges of developing and maintaining software in complex systems.	K2	CO1	7M
OR				
2.	a) Compare and contrast the inherent complexity of software with other complex systems, such as biological systems.	K4	CO1	7M
	b) Write the challenges of bringing order to chaotic systems and propose strategies for achieving order in complex systems.	K1	CO1	7M
UNIT – II				
3.	a) Compare and contrast different Software Development Life Cycle models. Illustrate with examples and discuss their strengths and weaknesses.	K2	CO2	7M
	b) Explain the importance of modeling in software development. Provide examples of scenarios where modeling is essential.	K2	CO2	7M
OR				
4.	a) Explain the different types of classes and relationships in basic structural modeling. Discuss the common mechanisms that are used to represent these relationships.	K2	CO2	7M
	b) Outline the conceptual model of the UML, and explain its significance in software engineering. Provide examples of scenarios where the UML is used.	K2	CO2	7M
UNIT – III				
5.	a) How would you describe the difference between a class and an object in object-oriented programming? Provide examples to support your answer.	K2	CO3	7M
	b) Using the case study of AI cryptanalysis, explain how class and object diagrams can be used to model complex systems.	K2	CO3	7M
OR				
6.	a) Explain the concepts of inheritance and polymorphism in the context of object-oriented programming. Provide a practical example to illustrate each concept.	K2	CO3	7M

	b)	Analyze the role of interfaces in object-oriented programming. How do they help to promote modularity and reusability in software design?	K4	CO3	7M
UNIT – IV					
7.	a)	How can interaction diagrams be used to model the behavior of a system? Provide an example of an interaction diagram and explain how it works.	K3	CO4	7M
	b)	Analyze the Vacation Tracking System case study using interaction diagrams. How do the interaction diagrams help in understanding the behavior of the system?	K4	CO4	7M
OR					
8.	a)	Explain the purpose of use case diagrams in behavioral modeling. Provide an example of a use case diagram for a web application, Vacation Tracking System	K2	CO4	7M
	b)	Assess the role of behavioral modeling in the development of the Vacation Tracking System. How does behavioral modeling help in improving the overall quality of the system?	K4	CO4	7M
UNIT – V					
9.	a)	Given a system that involves multiple processes and threads, how would you model the interactions between them using event-driven programming? Provide an example scenario.	K2	CO5	7M
	b)	Analyze the advantages and disadvantages of using event-driven programming compared to traditional procedural programming when designing a system with complex interactions between components.	K4	CO5	7M
OR					
10.	a)	Suppose you are designing a system that requires precise timing and synchronization. How would you model this system using time and space concepts? Provide an example diagram.	K2	CO5	7M
	b)	Analyze the trade-offs involved in choosing between a centralized or distributed deployment model for a large-scale software system.	K2	CO5	7M