

**MSc Sem.-1 Examination****405****Computer Science****February-2025****Time : 2-30 Hours]****[Max. Marks : 70**

- Q1(A) Explain the concept of Object-Oriented Technology and its key advantages over procedural programming. (7)
- Q1(B) Discuss the evolution of Object-Oriented Technology and its impact on software development. (7)
- OR
- Q1(A) Compare and contrast the procedural and object-oriented paradigms in software development. (7)
- Q1(B) What is Object-Oriented Modeling? Explain the importance of modeling in software development. (7)
- Q2(A) Summarize the historical development of Object-Oriented Modeling techniques. (7)
- Q2(B) Explain the significance of modeling in the software development lifecycle and describe the general steps involved in a modeling design technique. (7)
- OR
- Q2(A) Describe the three primary models used in object-oriented design: Class Model, State Model, and Interaction Model. (7)
- Q2(B) What are the key characteristics of the Class Model? Explain its importance in object-oriented modeling. (7)
- Q3(A) Define the State Model and explain its role in capturing the dynamic behavior of a system. (7)
- Q3(B) Discuss the concept of the Interaction Model and its significance in object-oriented analysis and design. (7)
- OR
- Q3(A) Explain the concepts of objects and classes with suitable real-world examples. (7)
- Q3(B) Define link and association in class modeling. Illustrate their differences with examples. (7)
- Q4(A) What is generalization in class modeling? Explain its importance with an example. (7)
- Q4(B) Discuss the concept of inheritance in object-oriented systems. How does it help in software reuse? (7)
- OR
- Q4(A) Explain the concept of aggregation with an example. How is it different from general association? (7)
- Q4(B) What is an abstract class? Discuss its significance in object-oriented design with an example. (7)
- Q5 True/False Attempt any seven out of twelve.(2 Marks each) (14)**
- 1) Object-Oriented Technology focuses on objects that combine data and behavior.

- 2) The procedural programming paradigm is more modular and reusable than object-oriented programming.
- 3) Object-Oriented Modeling is used to visually represent the structure and behavior of a system.
- 4) The Class Model captures the dynamic behavior of the system.
- 5) The State Model is used to represent the different states and transitions of an object in a system.
- 6) The Interaction Model focuses on the relationships and communications between objects.
- 7) A class in Object-Oriented Technology can represent both abstract and concrete entities.
- 8) A link represents a connection between multiple classes, while an association represents a single connection between objects.
- 9) Generalization is a process of deriving specific classes from a general base class.
- 10) Inheritance allows classes to share behaviors and attributes, improving code reusability.
- 11) Aggregation represents a "whole-part" relationship and is stronger than composition.
- 12) Abstract classes can have instances directly created from them.

**BEST OF LUCK**