

IV B. TECH I SEMESTER REGULAR EXAMINATIONS, NOVEMBER - 2023  
DESIGN PATTERNS  
(COMPUTER SCIENCE AND ENGINEERING)

Time: 3 hours

Max. Marks: 70

Note : Answer ONE question from each unit (5 × 14 = 70 Marks)

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UNIT-I

- 1. a) Give the step-by-step approach to apply a design pattern effectively. [7M]
- b) What is the basis for classifying design patterns? Categorize and tabulate the design patterns. [7M]

(OR)

- 2. a) Give an overview of organizing a catalog. [7M]
- b) How to use a design pattern? Describe the Subscribe/Notify protocol in MVC model. [7M]

UNIT-II

- 3. a) Explain the Spelling Checking and Hyphenation design problem in detail. [6M]
- b) If you want to minimize development costs by reusing methods, which design pattern would you choose? [8M]
- (i) Adapter Pattern (or)
- (ii) Singleton Pattern

(OR)

- 4. a) Can we use an abstract factory for supporting multiple window system in Lexi’s design? Explain. [7M]
- b) Illustrate Factory Method with neat sketch. [7M]

UNIT-III

- 5. Explain the Motivation, Structure, Related patterns, and Known Uses of Adapter Pattern? [14M]

(OR)

- 6. a) What are the different language features that are exploited by Proxy pattern? [7M]
- b) Explain the Motivation of Composite Pattern with suitable examples. [7M]

UNIT-IV

- 7. a) Explain motivation and applicability of Interpreter pattern. [7M]
- b) Explain sample code & related patterns of Memento. [7M]

(OR)

8. a) Illustrate the Chain of Responsibility in Behavioral patterns? [7M]  
b) Should Communication be encapsulated or distributed? Compare Mediator and Observer patterns. [7M]

UNIT-V

9. a) Explain the Node Visitor in abstract Syntax tree. [7M]  
b) Discuss about the pattern community. [7M]

(OR)

10. a) Explain the implementation of Template Pattern. [7M]  
b) Explain the Iterator pattern in Behavioral Pattern. [7M]

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