

CMR ENGINEERING COLLEGE: : HYDERABAD**UGC AUTONOMOUS****IV–B.TECH–I–Semester End Examinations (Supply) – April – 2025****DESIGN PATTERNS****(IT, CSM)****[Time: 3 Hours]****[Max. Marks: 70]****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 20 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A**(20 Marks)**

1. a) Define Design Pattern. [2M]
- b) How to use a design pattern? Write the guidelines. [2M]
- c) What is the structure of document? [2M]
- d) List about the seven problems in Lexis's design. [2M]
- e) What are related patterns of Abstract Factory pattern? [2M]
- f) List the benefits of Prototype pattern. [2M]
- g) Define Façade pattern. [2M]
- h) Explain about the uses of adapter pattern. [2M]
- i) Explain about the intent of Chain of Responsibility pattern. [2M]
- j) Explain the structure of Strategy. [2M]

PART-B**(50 Marks)**

2. Draw a diagram to show relationships among design patterns. How to select a design pattern? [10M]

OR

- 3.a) Explain about the design pattern in Smalltalk MVC. [5M]
- b) Describe about Catalog of Design Patterns. [5M]
4. Explain the following design problems in detail.
 - a) Embellishing the User Interface. [5M]
 - b) Spelling Checking and Hyphenation. [5M]

OR

5. Explain the usage of design patterns in designing a document editor. And also describe the design problems. [10M]

6. Describe consequence and implementation of Builder pattern. [10M]

OR

- 7.a) Discuss about creational patterns. [5M]
- b) What are the benefits of Singleton pattern? Discuss the implementation issues of singleton pattern in detail. [5M]

- 8.a) What are issues to consider when implementing the Composite pattern? Explain. [5M]
- b) Describe motivation and applicability of Flyweight pattern. [5M]

OR

9. Differentiate between Adapter and Bridge design pattern. [10M]

10. Explain collaborations and consequences of the following patterns:

a) Interpreter.

[5M]

b) Command.

[5M]

OR

11. Explain Template Method Design Pattern in detail.

[10M]
