

2111040103020002
EXAMINATION MARCH-APRIL 2024
MASTER OF COMPUTER APPLICATIONS
(THIRD SEMESTER)
DESIGN PATTERNS LEVEL 2

[Time: As Per Schedule]

[Max. Marks: 70]

Instructions:

- 1. Fill up strictly the following details on your answer book**
 - a. Name of the Examination : **MASTER OF COMPUTER APPLICATIONS (THIRD SEMESTER)**
 - b. Name of the Subject : **DESIGN PATTERNS LEVEL 2**
 - c. Subject Code No : **2111040103020002**
2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.

Seat No:

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Student's Signature

Q.1 A. Answer the following in short (Any TWO)

8

1. State and explain the situations where the Factory pattern is suitable. Use examples to explain your points.
2. Which are the principle factors due to which the different design patterns have gradually developed?
3. List the benefits of MVC pattern.
4. List the pros and cons of Chain of Responsibility behavioral pattern.

B. Explain SOLID principles.

6

Q.2 Attempt the following:

- A. List the benefits of using Design Patterns.

7

- B. Take an actual example of a class in any programming language and explain how you have developed it in such a way that it is open for extensions but is closed for modifications and why you have designed it in that way. **7**

OR

- B. Explain the situations where the Abstract factory method is very Appropriate in designing a system.

Q.3 Attempt the following (Any TWO): **14**

1. Which pattern can be used for developing a Sales Order Application? Explain, using an example, its class structure.
2. Write a note on Security Patterns repository.
3. Explain NULL design pattern.

Q.4 Attempt the following:

- A. State the steps that we should follow to implement the adapter design pattern. **7**

OR

- A. Briefly explain the Command design pattern, along with its structure

- B. Explain Mediator design pattern; highlighting the steps to implement it. **7**

Q.5 For an Automobile Service Center, we need to develop a feedback system for customers' vehicle services. Show how the above system can be designed using a Structural design pattern and/or Behavioral design pattern. **14**
