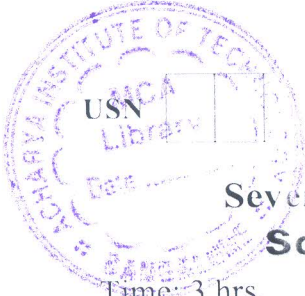


# CBCS SCHEME

18CS731



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## Seventh Semester B.E. Degree Examination, June/July 2023 Software Architecture and Design Patterns

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. What is design pattern? Explain essential elements of design patterns. (08 Marks)
- b. Explain how the design pattern catalog is organized. (06 Marks)
- c. Illustrate how the design patterns and frameworks are different. (06 Marks)

OR

- 2 a. Explain how to select the right design pattern for a problem. (08 Marks)
- b. Mention the importance of conceptual classes and relationships. (06 Marks)
- c. With example, explain a sequence diagram. (06 Marks)

### Module-2

- 3 a. Describe the motivation and applicability of adapter design pattern. (08 Marks)
- b. Give the structure of composite pattern. (06 Marks)
- c. Describe few common situations where proxy pattern is applicable. (06 Marks)

OR

- 4 a. Describe the motivation and applicability of decorator pattern. (08 Marks)
- b. Give the structure of proxy pattern. (06 Marks)
- c. What is part-whole hierarchies? Explain with example. (06 Marks)

### Module-3

- 5 a. Describe the motivation and applicability of chain of responsibility pattern. (08 Marks)
- b. Describe few common situations where command pattern is applicable. (06 Marks)
- c. Explain the structure of interpreter pattern. (06 Marks)

OR

- 6 a. Describe the motivation and applicability of Iterator pattern. (10 Marks)
- b. Describe the motivation and applicability of Mediator pattern. (10 Marks)

### Module-4

- 7 a. Explain model-view – controller architecture in detail. (08 Marks)
- b. Give three real world examples for the MVC pattern and explain. (06 Marks)
- c. Describe the use-case for drawing a line. (06 Marks)

OR

- 8 a. Describe the characteristics of architectural patterns in pattern based solutions. (08 Marks)
- b. What are the benefits of design of a sub system? (06 Marks)
- c. List the architectural patterns and explain any one. (06 Marks)

### Module-5

- 9 a. Explain the process of implementing a remote interface. (08 Marks)
- b. Describe the difficulties in accessing objects in different JVMs. (06 Marks)
- c. Write short notes on Marshalling and Demarshalling. (06 Marks)

OR

- 10 a. Describe how the library system can be deployed on the World-Wide-Web. (08 Marks)
- b. Compare GET and POST methods. (06 Marks)
- c. Explain the state transition diagram for issuing a book. (06 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.