



CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

18CS731

Seventh Semester B.E./B.Tech. Degree Examination, June/July 2025 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. (10 Marks)
- b. Explain how to select and use a design pattern. (10 Marks)

OR

- 2 a. Explain the business processes of the library system. (10 Marks)
- b. Describe library system with a neat use-case diagram. (10 Marks)

Module-2

- 3 a. Describe with neat diagram the object adapter case. (10 Marks)
- b. With neat diagram, explain :
 - i) A class adapter uses multiple inheritance
 - ii) An object adapter relies on object composition. (10 Marks)

OR

- 4 a. Define structural patterns. Explain applicability. Structure and participants of bridge. (10 Marks)
- b. Explain the issues to be consider while implementing the decorator pattern. (06 Marks)
- c. Mention few common situations in which proxy pattern is applicable. (04 Marks)

Module-3

- 5 a. Define behavioural patterns. Explain motivation, applicability and structure of command design pattern. (10 Marks)
- b. Explain motivation, applicability and implementation of interpreter design pattern. (10 Marks)

OR

- 6 a. Describe the motivation and applicability of mediator design pattern. (10 Marks)
- b. Explain motivation, applicability and structure of observer. (10 Marks)

Module-4

- 7 a. Explain model view controller architecture with a neat diagram. (10 Marks)
- b. Illustrate the implementation of UNDO operation. (10 Marks)

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.

OR

- 8 a. What are the benefits of the MVC pattern? (04 Marks)
b. Describe the use-case for drawing a line. (06 Marks)
c. Define controller, explain the steps involved in defining the controller. (10 Marks)

Module-5

- 9 a. With a neat diagram, explain the basic architecture of client/server systems. (10 Marks)
b. How servlets and HTML co-operate serve web pages? (10 Marks)

OR

- 10 a. Explain GET and POST methods. (04 Marks)
b. Explain state transition diagram for renewing books. (06 Marks)
c. Analyze the directory structure for the servlets. (10 Marks)

* * * * *