



CBCS SCHEME

USN 1 A Y 1 9 1 S 0 2 2

18CS731

Seventh Semester B.E. Degree Examination, Jan./Feb. 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. Define design pattern. Explain four essential elements of design pattern. (07 Marks)
- b. Briefly explain the design problems faced by object oriented designers. (13 Marks)

OR

- 2 a. Define Unified Modeling Language (UML). Discuss different types of UML structure diagrams. (13 Marks)
- b. What are business rules? Outline the four categories of business rules. (05 Marks)
- c. Mention the uses of defining conceptual classes and relationships. (02 Marks)

Module-2

- 3 a. Explain the Intent, Applicability and Structure of Adapter pattern. (10 Marks)
- b. Discuss the consequences and implementation issues of bridge pattern. (10 Marks)

OR

- 4 a. Explain the Intent, Applicability, Structure, Participants and Collaboration sections of proxy pattern. (14 Marks)
- b. Discuss the benefits and implementation issues of façade pattern. (06 Marks)

Module-3

- 5 a. Define behavioral patterns. Discuss Applicability, Structure, Participants, Collaborations of chain of responsibility design pattern. (12 Marks)
- b. Explain the implementation issues of command pattern. (08 Marks)

OR

- 6 a. What are the benefits and drawbacks of mediator pattern? (05 Marks)
- b. Define memento pattern and mention its applicability. (03 Marks)
- c. Discuss the implementation issues of observer pattern. (12 Marks)

Module-4

- 7 a. With a neat diagram, explain MVC architecture and its alternate view. (10 Marks)
- b. What are the benefits of MVC architectural pattern? (05 Marks)
- c. Illustrate the sequence of operations involved in drawing a line with a neat diagram. (05 Marks)

OR

- 8 a. Explain the design of model subsystem and controller subsystem. (10 Marks)
- b. Discuss pattern based solutions in detail. (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.

Module-5

- 9 a. Define distributed systems. Explain the advantages and disadvantages of distributed systems. (05 Marks)
- b. With a neat diagram, explain the basic architecture of client/server systems in detail. (10 Marks)
- c. Write a short note on GET and POST methods. (05 Marks)

OR

- 10 a. Briefly explain the steps involved in setting up remote object system. (12 Marks)
- b. Draw and explain state transition diagrams for adding book and renewing books in Library System. (08 Marks)
