

CBCS SCHEME

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17IS72

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. What is Design Pattern? Explain essential elements of design patterns. (08 Marks)
b. Explain how design pattern help in specifying object implementations. (08 Marks)
c. Differentiate between patterns and framework. (04 Marks)

OR

- 2 a. Describe the common causes of redesign along with the pattern that address them. (10 Marks)
b. What is object oriented development? Explain the key concepts of OOD. (10 Marks)

Module-2

- 3 a. Draw neat use case diagram for library system, also explain register user use case. (10 Marks)
b. Define conceptual classes and relationships taking an example. (10 Marks)

OR

- 4 a. Construct and explain the sequence diagram for renewing Books in Library System. (10 Marks)
b. Explain the different questions need to be answered during process. (10 Marks)

Module-3

- 5 a. Define Structural Patterns. Explain in detail the adapter pattern. (10 Marks)
b. Describe the motivation of composite pattern with neat diagram. (10 Marks)

OR

- 6 a. Explain the following with respect to the decorator pattern :
i) Structure
ii) Participants
iii) Collaborations
iv) Consequences. (10 Marks)
b. Briefly illustrate the flyweight pattern in detail. (10 Marks)

Module-4

- 7 a. What is architectural pattern? Explain the MVC patter in detail. (10 Marks)
b. Describe the process of designing the system in detail, taking a simple drawing program as example. (10 Marks)

OR

- 8 a. Explain he issues need to be highlighted, when implementing the undo operation. (08 Marks)
b. What is pattern based solution? Explain the characteristics of architectural pattern. (06 Marks)
c. Write short notes on Drawing incomplete items. (06 Marks)

Module-5

- 9 a. What are distributed systems? Explain the basic architecture of client/server system. (10 Marks)
b. List and explain the steps to setup remote object system. (10 Marks)

OR

- 10 a. Draw and explain the state transition diagram for renewing book in library system. (10 Marks)
b. Describe briefly about state transition diagram for logging in, in library system. (10 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.