CBCS SCHEME

ACHARYA INSTITUTE OF TECHNOLOGY MCA Library Date

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18CS731

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.

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-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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