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18CS731

Seventh Semester B.E. Degree Examination, June/July 2024
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 a Design Pattern? List and explain the various templates used in Design Pattern. **(08 Marks)**
    b.   List and explain the different classification of Design Pattern. **(06 Marks)**
    c.   Explain the different Step – by – Step approach in applying a design pattern effectively. **(06 Marks)**

OR

2   a.   Explain the two categories done in requirement analysis. Write the use case for Adding new books. **(10 Marks)**
    b.   What are the problems faced in Use case for Book check? Write the rules used to rectify this problem and also write use case for revised Book check out. **(10 Marks)**

Module-2

3   a.   When do you use structural patterns? Explain the applicability, structure and participants of Bridge design pattern. **(10 Marks)**
    b.   Explain Motivation , Applicability and Structure of Decorator design pattern. **(10 Marks)**

OR

4   a.   Explain Motivation , Applicability and Participants of Facade design pattern. **(10 Marks)**
    b.   Explain Motivation , Applicability , Structure of Flyweight design pattern. **(10 Marks)**

Module-3

5   a.   Define Behavioural design pattern. Explain Motivation , Applicability , Participants of Command design pattern. **(10 Marks)**
    b.   Explain Motivation , Applicability and Implementation of Interpreter design pattern. **(10 Marks)**

OR

6   a.   Explain Motivation , Applicability , Structure of a Mediator design pattern. **(10 Marks)**
    b.   Explain Applicability , Participants and Collaborations of a Memento design pattern. **(10 Marks)**

Module-4

7   a.   What is MVC Architecture pattern? Explain and list the benefits. **(10 Marks)**
    b.   Explain Designing the system , Substance for an Interactive system. **(10 Marks)**

OR

8   a.   Write and explain the code for Implementation of model , view and controller. **(10 Marks)**
    b.   List the issues in context of implementing the Undo operation. **(06 Marks)**
    c.   Write and explain the Sequence diagram for adding a line. **(04 Marks)**

Module-5

9   a. Explain the Client / Server architecture in detail.   **(10 Marks)**

      b. Explain Implementing an Object – oriented system on the web.   **(06 Marks)**

      c. Write a note on Input and Output in Java Servlet.   **(04 Marks)**

OR

10   a. Briefly explain steps used to setup a Remote Object System.   **(14 Marks)**

      b. Explain GET and POST methods.   **(06 Marks)**

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