Code No:**R1641052**

R16

Set No. 1

IV B.Tech I Semester Regular/Supplementary Examinations, March - 2021
SOFTWARE ARCHITECTURE AND DESIGN PATTERNS
(Computer Science and Engineering)

Time: 3 hours   **Max. Marks: 70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B
*****

PART–A*(14 Marks)*

1. a) Write short notes on Architecture Activities. [3]
    b) What is software product line? [2]
    c) Explain How to Use a Design Pattern. [3]
    d) What are creational patterns? Write intents of creational patterns. [2]
    e) Describe Structures of Factory Method and Builder Patterns. [2]
    f) Identify and explain Design Problems of document editor. [2]

PART–B*(4x14 = 56 Marks)*

2. a) Explain architecture as a transferable, re-usable model with an example. [7]
    b) What are the architectural styles? List it's patterns. [7]

3. a) Discuss in detail implementation of CBAM. [7]
    b) What are the Techniques for repairing interface mismatch and avoiding interface mismatch? [7]

4. a) Discuss in detail Catalog of Design Pattern. [7]
    b) Explain Factory method with an example. [7]

5. a) Explain the structure of decorator pattern with suitable example. [7]
    b) Explain the structure of Bridge pattern with example. [7]

6. a) Explain Intent, Applicability and structure of Behavioral patterns. [7]
    b) Explain the observer design pattern and discuss the consequences and implementation issues. [7]

7. a) Explain Document Structure and User Operations of Designing a Document Editor. [7]
    b) Discuss about the supporting multiple window systems design problem. [7]

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Set No. 2

IV B.Tech I Semester Regular/Supplementary Examinations, March - 2021
SOFTWARE ARCHITECTURE AND DESIGN PATTERNS
(Computer Science and Engineering)

Time: 3 hours
Max. Marks: 70

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B
*****

PART–A *(14 Marks)*

1. a) What are the Quality Attributes? [2]
    b) Explain Participants in the ATAM. [3]
    c) Explain how to Select a Design Pattern. [2]
    d) Explain about Façade of structural pattern. [2]
    e) Write a short note on chain of responsibility. [2]
    f) Explain about document structure. [3]

PART–B *(4x14 = 56 Marks)*

2. a) Why Software Architecture is Important? Explain The Architecture that Enables
    a System's Quality Attributes. [7]
    b) Explain in detail about reconstructing software architecture. [7]

3. a) What are the steps that can be specified in component based design as Search. [7]
    b) Explain the phases of ATAM. [7]

4. a) Explain the builder pattern with example. [7]
    b) Discuss in detail MVC architecture in small talk. [7]

5. a) Explain Composite, Decorator of structural Patterns. [7]
    b) Explain collaborations of Flyweight. [7]

6. a) Explain Participants, Collaborations and Consequences of strategy pattern. [7]
    b) Explain the participants, collaborations, implementation and Sample code of the
    mediator pattern. [7]

7. a) Discuss in detail Celsius Tech product line development with concepts of design
    patterns. [7]
    b) Explain the Spelling Checking and Hyphenation design problem in detail. [7]

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Set No. 3

IV B.Tech I Semester Regular/Supplementary Examinations, March - 2021
SOFTWARE ARCHITECTURE AND DESIGN PATTERNS
(Computer Science and Engineering)

Time: 3 hours   Max. Marks: 70

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B
*****

PART−A*(14 Marks)*

1. a) Why is Software Architecture Important?   [2]
    b) List different Outputs of the ATAM.   [2]
    c) Differentiate between Structural and Creational Patterns.   [2]
    d) How design patterns solve design problems.   [2]
    e) What are consequences of Bridge Pattern? Explain its Known uses.   [3]
    f) Explain Document Structure of Document Editor   [3]

PART−B*(4x14 = 56 Marks)*

2. a) Differentiate between System Architecture versus Software Architecture.   [7]
    b) Discuss in detail Architectural Structures and Views.   [7]

3. a) Explain the Quantitative approach of Architecture design decision making for
       CBAM.   [7]
    b) Explain the impact of software architecture in future use.   [7]

4. a) State and explain the classification of design patterns.   [7]
    b) Explain the singleton pattern with an example?   [7]

5. a) Explain in detail Adapter, Proxy of Structural Patterns.   [7]
    b) Explain consequences of façade and flyweight.   [7]

6. a) Explain Participants, Collaborations and Consequences of template method.   [7]
    b) Discuss the implementation issues of Iterator.   [7]

7. a) Discuss in detail inter operability of World Wide Web in design pattern.   [7]
    b) Explain supporting multiple look and feel standards and user operations.   [7]

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Set No. 4

IV B.Tech I Semester Regular/Supple Examinations, March - 2021
SOFTWARE ARCHITECTURE AND DESIGN PATTERNS
(Computer Science and Engineering)

Time: 3 hours   Max. Marks: 70

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B
*****

PART−A*(14 Marks)*

1. a) Explain reasons for software architectures importance.   [2]
    b) Explain Participants in the CBAM.   [2]
    c) Explain Describing Design Patterns.   [2]
    d) Write sample code for singleton pattern.   [2]
    e) Describe the Structure and participants of Observer Pattern.   [3]
    f) What are seven problems of Lexi's Design? Explain.   [3]

PART−B*(4x14 = 56 Marks)*

2. a) List and Explain quality attributes for system and software?   [7]
    b) Describe reference models and reference architectures.   [7]

3. a) Explain Utility and Utility-Response Curves of CBAM.   [7]
    b) Explain about software product lines.   [7]

4. a) List and explain various ways of organizing the design patterns.   [7]
    b) Explain Builder pattern with an example.   [7]

5. a) Discuss in detail about any two Structural Patterns   [7]
    b) Explain collaborations and consequences of Flyweight and Proxy.   [7]

6. a) Explain Participants, Collaborations and Consequences of iterator pattern. [7]
    b) Discuss the consequences and implementation issues of memento.   [7]

7. a) Discuss in detail Air Traffic Control designing for high availability [7]
    b) Which pattern can be used to achieve multiple look and feel in any product
        design?   [7]

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