Code: 13A05701

R13

B.Tech IV Year I Semester (R13) Regular Examinations November/December 2016

SOFTWARE ARCHITECTURE & DESIGN PATTERNS

(Common to CSE and IT)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) What is data abstraction?
(b) What is pile?
(c) What is filter?
(d) What is process control?
(e) What is database integration?
(f) What is mediator?
(g) What is prototype?
(h) What is system quality?
(i) Define document structure.
(j) What are the object oriented concepts?

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 Explain various architecture styles and heterogeneous architectures.

OR

3 What is shared information systems? Explain architectural structures of shared information systems.

UNIT – II

4 What is design pattern? Describe implementation of design patterns.

OR

5 Discuss the creational patterns, abstract factor and factory method.

UNIT – III

6 Explain structural patterns adapter and bridge.

OR

7 Explain structural pattern Flyweight and Proxy.

UNIT – IV

8 Explain chain of responsibility for Behavioral patterns.

OR

9 Explain behavioral patterns Mediator and Observer.

UNIT – V

10 Explain strategies and template method.

OR

11 Explain user interface and window systems.

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B.Tech IV Year I Semester (R13) Supplementary Examinations June 2017

SOFTWARE ARCHITECTURE & DESIGN PATTERNS

(Common to CSE and IT)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) List any four goals of software architecture.
(b) What are the design quality attributes.
(c) What is principle of least knowledge?
(d) What are the essential elements of a design pattern?
(e) Describe a cursor.
(f) What is an adapter?
(g) What is a proxy?
(h) Explain the purpose of an observer.
(i) What is the functionality of a visitor?
(j) Explain the concept of monoglyph.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 (a) What is software architecture? Explain.
(b) Explain the Architectural patterns, Reference models and Reference architectures.

OR

3 Draw the process flow diagram for the Cost Benefit Analysis Model (CBAM) and discuss with the help of an example.

UNIT – II

4 (a) Clearly bring out the difference between inheritance and composition along with their merits and merits.
(b) What are the different approaches to select a Design Pattern? Explain.

OR

5 (a) Briefly explain Singleton Design Pattern.
(b) What are the consequences of Abstract factory Design Pattern?

UNIT – III

6 (a) Compare façade and flyweight patterns.
(b) Explain the significance of proxy patterns with an example.

OR

7 (a) Discuss in detail about the narrow interface implementation approaches.
(b) Draw and explain the structure of bridge pattern.
(c) Explain the implementation issues of a bridge pattern.

UNIT – IV

8 (a) List and explain the variants and alternatives of iterator pattern.
(b) What is the motivation for mediator pattern? Explain.

OR

9 (a) Give brief description about the implementation issues and consequences of chain of responsibility.
(b) Write a detailed note on collaborations, consequences and applicability of command pattern.

UNIT – V

10 (a) Give brief description about the strategy design pattern.
(b) Explain the role of template method in designing of the patterns.

OR

11 Explain the following in detail:

(a) Who is responsible for traversing the object structure?
(b) Structure of a state pattern.
(c) Applicability of strategy pattern.

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