Code No: **R41052**

R10

Set No. 1

IV B.Tech I Semester Supplementary Examinations, Feb/Mar - 2015
UML AND DESIGN PATTERNS
(Computer Science and Engineering)

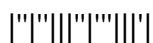**Time: 3 hours**   **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
*****

1 a) Explain about common mechanisms in UML?   [10]

   b) Write about Grouping things and Annotational things? Give suitable example
       for each?   [5]

2 a) What is Generalization? Give an example that implement single, multiple
       inheritance using generalization?   [7]

   b) Explain different stereo types that we can apply on Generalization relationship?   [8]

3 a) What is the purpose of Sequence Diagram? How to model a "use case" to a
       sequence diagram? Give one example?   [8]

   b) Describe in detail about state chart diagrams.   [7]

4 a) Explain the common modeling Techniques for Deployment diagrams?   [8]

   b) How we relate components and Interfaces in a component diagram? Explain
       with one example?   [7]

5 a) What are the common causes that lead to redesign of design patterns?   [7]

   b) Discuss about supporting multiple window systems in Lexi's design.   [8]

6 a) How to connect   parallel class hierarchies? Explain with one example.   [8]

   b) Write down benefits of prototype design pattern.   [7]

7 a)   Write a short note on proxy pattern.   [8]

   b) Compare the structural and behavioral patterns   [7]

8 a) Where we can use the command pattern?   [7]

   b) Explain about consequences and implementation of Observer design pattern   [8]

R10

IV B.Tech I Semester Supplementary Examinations, Feb/Mar - 2015
UML AND DESIGN PATTERNS
(Computer Science and Engineering)

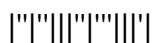**Time: 3 hours**   **Max. Marks: 75**
Answer any FIVE Questions
All Questions carry equal marks
*****

1 a) What is a well formed model? Write down the rules of the UML.   [5]

   b) Explain about the conceptual model of the UML.   [10]

2 a) How we model single Inheritance? Explain with one example.   [7]

   b) What is classifier? Define different types of classifiers in UML. Represent
       their graphical notations.   [8]

3 a) What is actor generalization and use case generalization in use case
       diagrams? Explain with one example?   [8]
   b) Draw Use case, State chart and Activity diagrams for a "user login and
       shopping cart" of a user in a online shopping portal?   [7]

4 a) Differentiate components and classes.   [7]

   b) Write about deployment diagrams. How to model a fully distributed system?   [8]

5 a)   How to select a design pattern?   [8]

   b) Discuss different ways in which patterns and framework share similarities
       and in which they differ.   [7]

6 a)   Discuss about applicability, participants and consequences of builder pattern. [8]

   b) Explain about various structural patterns.   [7]

7 a) Discuss about applicability, structure, participants and consequences of
       Flyweight design pattern.   [8]
   b) Write about decorator pattern. What are the benefits and liabilities of
       decorator pattern?   [7]

8 a) Discuss about the various implementation variants for iterator.   [8]

   b) Write in detail about Strategy behavioral pattern.   [7]

R10

IV B.Tech I Semester Supplementary Examinations, Feb/Mar - 2015
UML AND DESIGN PATTERNS
(Computer Science and Engineering)

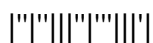**Time: 3 hours**   **Max. Marks: 75**
Answer any FIVE Questions
All Questions carry equal marks
*****

1 a) Write short notes about diagrams in UML.   [10]

   b) How we can extend vocabulary, properties, and semantics of UML building
       blocks?   [5]

2 a) What is dependency relationship? What are different stereotypes that may be
       apply to dependency relationships among classes and objects in class
       diagram?   [8]
   b) Explain modeling techniques for creating classes.   [7]

3 a) How to model flows of control by organization? Give example.   [7]

   b) Describe modeling as an operation.   [8]

4 a) How to model Synchronization and Inter process communication using UML.
                                                                                              [8]
   b) What are different types of components that are used in component diagram?
       List out different uses of component diagrams?   [7]

5 a) Explain with a neat diagram the Design Pattern relationships   [10]

   b) Explain about Glyph and Monoglyph in Lexi's design.   [5]

6 a) What are the benefits of Prototype pattern? Discuss the implementation issues.   [7]

   b)   Discuss in detail the different techniques for implementing abstract factory.   [8]

7 a) Explain the implementation issues of a chain of responsibility pattern.   [7]

   b) Where we can apply flyweight pattern? Discuss about Structure and
       participants of flyweight pattern.   [8]

8 a) Explain the role of participants in command design pattern.   [7]

   b) Write in detail about mediator behavioral pattern.   [8]

IV B.Tech I Semester Supplementary Examinations, Feb/Mar - 2015
UML AND DESIGN PATTERNS
(Computer Science and Engineering)

Time: 3 hours   Max. Marks: 75
Answer any FIVE Questions
All Questions carry equal marks
*****

1 a) What is Object orientation? Explain object oriented modeling?   [7]

   b) What are the artifacts of a software intensive system?   [8]

2 a) What is forward engineering? How to forward engineer a class diagram? Explain with one example.   [8]
   b) What is reverse engineering? How to reverse engineer a class diagram? Explain with one example.   [7]

3 a) How to model Exceptions? Give one example which will handles single and multiple Exceptions.   [7]
   b) Write about sub states? Explain about Sequential sub states, History states, Concurrent substates.   [8]

4 a) Explain about common modeling techniques for deployment diagrams.   [7]

   b) Explain about modeling a client/server system.   [8]

5 a) Explain about how design patterns solve the challenges lying in applying reusable software.   [8]
   b) Explain about catalogs of design pattern.   [7]

6 a) Write down about the benefits of singleton pattern. What are the implementation issues to consider when using the singleton pattern?   [8]
   b) Compare the creational patterns and structural patterns.   [7]

7 a) Which pattern is used to avoid coupling. Explain them with suitable example.   [8]

   b) Explain about consequences and implementation of Observer design pattern.   [7]

8 a) List the different consequences and implementation issues of memento pattern.   [8]

   b) Give brief description about what we can expect from design pattern.   [7]