

IV B.Tech I Semester Regular Examinations, November - 2016

**UML & DESIGN PATTERNS****(Common to Computer Science & Engineering and Information Technology)****Time: 3 hours****Max. Marks: 70***Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any THREE questions from Part-B*

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**PART-A (22 Marks)**

1. a) What are different perspectives to apply UML? [3]
- b) What are different types and categories of requirements in UP? [4]
- c) What is the purpose of GRASP patterns? [5]
- d) Write the intent of fabrication design pattern? [4]
- e) Define sub-machine? [3]
- f) Define package and draw the UML notation for Package. [3]

**PART-B (3x16 = 48 Marks)**

2. a) What is a design? Explains the goals of good design? [8]
- b) Explain MVC architecture with an Example? [8]
3. a) What is use case? Explain different elements in use case with an example? [8]
- b) Draw a neat use case diagram for online railway reservation system? [8]
4. a) Briefly discuss about the GRASP design patterns? [8]
- b) What are different artifacts that may start in elaboration phase? Explain. [8]
5. a) Explain Intent, Motivation and Applicability for factory design pattern with an example? [8]
- b) Describe the concept of Publish-Subscribe? [8]
6. a) Explain common modeling techniques for State chart diagram? [8]
- b) Draw a neat Activity diagram for ATM application? [8]
7. a) Explain in detail about Use case relationships. [8]
- b) Briefly explain about packaging model elements. [8]

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**PART-A (22 Marks)**

1. a) Mention different types of workflows in OOAD? [3]
- b) Write short notes on FURPS model? [4]
- c) What are the advantages of Domain Modeling? [4]
- d) Write the intent of Indirection design pattern? [3]
- e) Describe Fork and Join in activity diagram? [4]
- f) Define Association and Aggregation. [4]

**PART-B (3x16 = 48 Marks)**

2. a) Explain Iterative development with an example? [8]
- b) Briefly discuss about the steps how to select a design pattern? [8]
3. a) How are requirements organized in UP artifacts? [8]
- b) Explain use case diagram with an example? [8]
4. a) How to create a domain model? Explain with one example. [8]
- b) Write short notes on Information expert, Creator of GRASP and Cohesion. [8]
5. a) Explain in detail about factory design pattern? [8]
- b) Explain Applicability, Structure and participants for singleton design pattern with an example? [8]
6. a) Explain common modeling techniques for Activity diagram? [8]
- b) Draw a neat component diagram for online shopping? [8]
7. a) Explain use case template with an example? [8]
- b) Explain the usage of generalization relationship in various UML diagrams? [8]

Code No: RT41052

**R13**

**Set No. 3**

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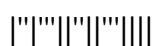
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**PART-A (22 Marks)**

1. a) What are the benefits of Iterative Development? [5]
- b) Describe the scope of the use case model? [4]
- c) Mention any three differences between sequence and collaboration diagrams? [3]
- d) Write the intent of publish-subscribe design pattern? [4]
- e) Write the differences between class and object diagrams? [3]
- f) Write short notes on specialization relationship? [3]

**PART-B (3x16 = 48 Marks)**

2. a) Explain different phases in unified process? [8]
- b) Write short notes on Describing design patterns? [8]
3. a) Explain use case types and formats with examples? [8]
- b) What different artifacts that may start in Inception phase? Explain. [8]
4. a) Explain system sequence diagram with an example. [8]
- b) What are conceptual classes? What are different strategies to find conceptual classes? [8]
5. a) Explain differences between pure fabrication and indirect fabrication? [8]
- b) Explain Applicability, Structure and participants for façade design pattern with an example? [8]
6. a) Explain common modeling techniques for component diagram? [8]
- b) Draw a neat state chart diagram for library management system? [8]
7. a) Explain stereo types for dependency relationships in detail? [8]
- b) Define guidelines to model association classes, abstract classes and association role names? [8]



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**PART-A (22 Marks)**

1. a) Define design pattern? State use of design pattern? [4]
- b) What is the purpose of Inception phase? [4]
- c) What is meant by interaction diagram? [4]
- d) Write the intent of factory pattern. [3]
- e) Define Events, States and Transitions. [3]
- f) Explain generalization relationship with example? [4]

**PART-B (3x16 = 48 Marks)**

2. a) Explain about Object Oriented Analysis and Design process. [8]
- b) Write about Unified Process work flows. [8]
3. a) How to find use cases? Explain with an example. [8]
- b) What are three types of use cases? Explain with examples. [8]
4. a) Explain the operation of Mapping Designs to Code. [8]
- b) Explain GRASP designing objects with responsibilities. [8]
5. a) Explain about Façade design pattern. [8]
- b) Discuss about Indirection pattern with an example. [8]
6. a) Discuss about activity diagrams. [8]
- b) What artifacts to be identified for drawing component diagram. [8]
7. a) What are association classes? What are the guidelines to add association class? Illustrate with an example. [8]
- b) Discuss about Aggregation and Composition relationships. [8]