Code No: **RT41052** | **R13** | **Set No. 1**

IV B.Tech I Semester Regular/Supplementary Examinations, October/November - 2017
UML AND DESIGN PATTERNS
(Common to Computer Science and 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 is OOAD? Briefly explain its origin and how it is used. [3]
   b) What is inception? Explain the artifacts of inception. [4]
   c) Define SSD with an example. [4]
   d) Define design pattern? What is the actual purpose of it? [3]
   e) List out the UML diagrams. Explain which diagrams are static and dynamic. Why? [4]
   f) Explain the contents and the different relationships used in use case? [4]

PART–B *(3x16 = 48 Marks)*

2. a) Briefly describe how the OOAD and UML helps in project development. [8]
   b) Explain what are the mapping disciplines to UML artifacts? [8]

3. a) What is meant by FURPS? Explain briefly? [8]
   b) Briefly explain what are the use case types and formats [8]

4. a) What are the interaction diagrams? Briefly explain with examples. [8]
   b) Define and differentiate the sequence diagram and system sequence diagram with example? [8]

5. a) Discuss about indirection pattern with example. [8]
   b) What is singleton? Explain how it helps in communication with an example and its code? [8]

6. a) What are activity diagrams? Explain briefly. [8]
   b) Explain object diagram with example. [8]

7. a) What are the dependency relationships in use case? Explain with notations and examples? [8]
   b) Draw use case diagram for online shopping. [8]

Code No: **RT41052**   **R13**   Set No. 2

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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
*****

PART–A *(22 Marks)*

1. a) What is the difference between UML and OOAD?   [3]
    b) How the requirement analysis can be done?   [4]
    c) Explain How to identify concepts in domain model?   [4]
    d) What is meant by persistent storage? Where it is used and why?   [4]
    e) Differentiate state chart and activity diagram?   [4]
    f) What is meant by generalization and where it is used?   [3]

PART–B *(3x16 = 48 Marks)*

2. a) Explain iterative development and unified process   [8]
    b) Define UML. How it is used? What actually it deals about and its contents?   [8]

3. a) Explain the use case diagram for a library management system   [8]
    b) What are the goals and scope of a use case   [8]

4. a) Discuss about Use case realizations? Explain with the help of GRASP patterns.   [8]
    b) Draw the class diagram for customer support system.   [8]

5. a) Briefly Explain singleton design pattern.   [8]
    b) Explain how the problem of assigning responsibilities can be solved? Give example.   [8]

6. a) Give an overview on component diagram   [8]
    b) Draw the sequence diagram for library management system?   [8]

7. a) What is generalization? Explain how it is used in use case model with an example?   [8]
    b) What are the domain model refinements?   [8]

Code No: **RT41052**   **R13**   Set No. 3

IV B.Tech I Semester Regular/Supplementary Examinations, October/November - 2017
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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
*****

PART–A *(22 Marks)*

1.	a)	What are the typical activities in OOAD?	[4]
	b)	Define UP context and UP artifacts	[4]
	c)	What is the process of adding associations in a domain model	[4]
	d)	Explain the fabrication design pattern.	[4]
	e)	What is the goal of a component diagram?	[3]
	f)	How to identify things in domain model?	[3]

PART–B *(3x16 = 48 Marks)*

2.	a)	What is a design pattern and explain the goals for a good design?	[8]
	b)	Discuss about UML artifacts and SDLC phases and how they can be mapped?	[8]
3.	a)	Explain the elements and sections of a use case.	[8]
	b)	Draw the use case diagram for point of sale.	[8]
4.	a)	Design class diagrams for case study with the skeleton code.	[8]
	b)	Give an account on sequence diagram with an example.	[8]
5.	a)	Explain how fabrication solve the problem of elements having high coupling.	[8]
	b)	What is indirection? Briefly explain	[8]
6.	a)	Give an overview on Object Diagrams.	[8]
	b)	Explain how fork and join help in activity diagram with example.	[8]
7.	a)	What is the architecture of a domain model? Explain with a neat sketch.	[8]
	b)	Explain in detail about the total relationships in UML and define how many relationships are used for use case.	[8]

Code No: **RT41052**   **R13**   Set No. 4

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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
*****

PART–A *(22 Marks)*

1. a) What are the UML artifacts? Explain   [4]
   b) How to identify additional requirements?   [4]
   c) Define elaboration? Explain its process   [4]
   d) What is the design pattern for solving the privacy issue? Explain.   [4]
   e) Differentiate between class and activity class.   [3]
   f) What is the difference between note and node.   [3]

PART–B *(3x16 = 48 Marks)*

2. a) Give an account on MVC architecture with a neat diagram?   [8]
   b) What are the UML diagrams? Explain them with notations and the relations
      ships used?   [8]

3. a) Explain the process of writing requirements for the case study in the use case
      model   [8]
   b) Discuss about contents in a use case diagram and explain how it can be drawn
      with an example.   [8]

4. a) Design class diagrams in each MVC layer.   [8]
   b) How the mapping can be done from design to code   [8]

5. a) Briefly explain about façade   [8]
   b) Explain about publish – subscribe design pattern   [8]

6. a) Briefly explain component diagram.   [8]
   b) Draw a State chart Diagram for library management system.   [8]

7. a) Explain in detail about the packaging model elements   [8]
   b) Draw use case diagram for ATM.
                                                                                   [8]

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