Code No: R05310502 **Set No. 1**

III B.Tech I Semester Supplimentary Examinations, February 2008
OBJECT ORIENTED ANALYSIS AND DESIGN
(Common to Computer Science & Engineering, Information Technology and Computer Science & Systems Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Why is it necessary to have a variety of diagrams in a model of a system?
   (b) Which UML diagrams give a static view and which give a dynamic view of a system?
   (c) Consider a computer-based system that plays chess with a user. Which UML diagrams would be helpful in designing the system? Why?
   (d) Contrast the following:
      i. Actors Vs. Stakeholders
      ii. Usecase Vs. Algorithm. [4x4=16]

2. (a) Explain the following:
      i. Role
      ii. Multiplicity
      iii. has-a relationship
      iv. Generalization
   (b) Define idiom. Enumerate the steps to model structural relationships.
   (c) Define the following:
      i. Stereotype
      ii. Tagged value [8+6+2]

3. (a) Enumerate the steps to model logical database schema. Give all example class diagrams.
   (b) Explain the common uses of class diagrams briefly. [12+4]

4. (a) How is recursion represented in a sequence diagram?
   (b) Explain the following with regard to interaction diagrams.
      i. Object life line
      ii. ≪create≫ and ≪destroy≫ messages
      iii. Focus of control
      iv. Dewey decimal numbering
      v. Nesting of tours of control
      vi. Semantic equivalence. [4+12]

5. (a) How is activity diagram used to model an operation. Enumerate the steps. Give an example diagram and explain briefly.
   (b) Enumerate the steps to model a workflow with reference to activity diagrams. [8+8]

6. (a) Give the sketch of a state machine for the controller in a home security system, which is responsible for monitoring various sensors around the perimeter of the house. Briefly explain.
   (b) Explain the following parts of a transition
      i. Event trigger.
      ii. Guard condition. [12+4]

7. (a) What are the contents, common properties and common uses of component diagrams. Briefly explain.
   (b) Enumerate the steps to model source code using component diagrams. [12+4]

8. (a) Write a Java program for the Loan class [8]
   (b) Draw activity diagram to inform a person when a loan is due and explain [8]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: R05310502 **Set No. 2**

III B.Tech I Semester Supplimentary Examinations, February 2008
OBJECT ORIENTED ANALYSIS AND DESIGN
(Common to Computer Science & Engineering, Information Technology and Computer Science & Systems Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Explain briefly about usecase, sequence, component and deployment diagrams.
   (b) Explain the UML approach to SDLC. [8+8]
2. (a) What is generalization/ specialization hierarchy. Give an example diagram.
   (b) Give example diagrams for UML notation of various relationships in UML, one for each relationship.
   (c) Give an example diagram in UML that depicts all the four relationships.
   (d) Contrast: dependency Vs. association. [4+6+4+2]
3. (a) Enumerate the steps to model simple collaborations.
   (b) Enumerate the steps to model logical database schema.
   (c) What is class diagram? [6+8+2]
4. Consider the usecase "withdraw amount" related to ATM transaction modeling. Draw both the interaction diagrams for the usecase. Explain briefly. [16]
5. (a) Draw a use case diagram to model the behavior of a cellular phone. Explain briefly.
   (b) What are the contexts, common properties and common uses of use case diagrams.
   (c) Enumerate the steps to model the context of a system. [6+6+4]
6. (a) Contrast realtime system with distributed system.
   (b) What is the UML notation for the following. Explain briefly.
      i. timing marks
      ii. time expressions
      iii. timing constraints.
   (c) Enumerate the steps to model objects that migrate. [3+9+4]
7. (a) Enumerate the steps to model source code. Illustrate with a diagram in UML notation.
   (b) Enumerate the steps to model an executable release. Illustrate with a UML diagram. [8+8]

8. (a) For coding, the specifications are fetched from which diagrams in the design model? explain [6]

   (b) What are the packages in the Library system? explain [10]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: R05310502 **Set No. 3**

III B.Tech I Semester Supplimentary Examinations, February 2008
OBJECT ORIENTED ANALYSIS AND DESIGN
(Common to Computer Science & Engineering, Information Technology and Computer Science & Systems Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Why is it necessary to have a variety of diagrams in a model of a system?
   (b) Which UML diagrams give a static view and which give a dynamic view of a system?
   (c) Consider a computer-based system that plays chess with a user. Which UML diagrams would be helpful in designing the system? Why?
   (d) Contrast the following:
      i. Actors Vs. Stakeholders
      ii. Usecase Vs. Algorithm. [4x4=16]

2. (a) Briefly explain any four standard constraints that apply to generalization relationships.
   (b) Briefly explain the four adornments that apply to all association.
   (c) What is the stereotype applied to generalization relationships? Give a brief. [6+8+2]

3. (a) Draw a class diagram that depicts the various relationships in UML.
   (b) What are the common properties and uses of class diagrams?
   (c) What are the contents in class diagrams? [6+6+4]

4. (a) Describe about polymorphism in collaboration diagrams.
   (b) Explain iterated messages and use of self in messages.
   (c) List out any four differences between the two kinds of interaction diagrams. [6+6+4]

5. (a) Explain the following standard stereotypes that adorn the ends of links.
      i. association
      ii. self
      iii. global
      iv. local
      v. parameter.
   (b) Briefly write about messages and sequencing with an illustrative diagram. [10+6]

6. (a) Enumerate the steps to model the distribution of objects. Explain briefly considering a UML diagram.
   (b) Enumerate the steps to model interprocess communication. [10+6]
7. (a) Define component. What are the differences between components and classes? How are component and interface related?
   (b) What are the properties of components?
   (c) What are standard stereotypes UML defines that apply to components.[8+4+4]
8. (a) Draw class diagram for use interface classes in the functions menu and explain [6]
   (b) Draw a component diagram for the library system and explain [5]
   (c) Draw a class diagram of business objects in the design model and explain [5]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: R05310502 **Set No. 4**

III B.Tech I Semester Supplimentary Examinations, February 2008
OBJECT ORIENTED ANALYSIS AND DESIGN
(Common to Computer Science & Engineering, Information Technology and Computer Science & Systems Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) What is genericity?
   (b) Enumerate the principle of modeling.
   (c) Enumerate any six artifacts.
   (d) Briefly explain the extensibility mechanisms in UML. [3+4+3+6]
2. (a) Enumerate the steps to model architectural views.
   (b) What are the characteristics of a well-structured packages?
   (c) Give an example UML diagram that depicts all the four relationships.
   (d) Contrast is-a relationship with has-a relationship. [4+6+4+2]
3. (a) Enumerate the steps to forward engineer a class diagram.
   (b) Enumerate the steps to reverse engineer a class diagram.
   (c) What are forward engineering and reverse engineering? [8+6+2]
4. (a) What are interaction diagrams? What are their contents and common properties? Define semantic equivalence between two kinds of interaction diagrams.
   (b) Enumerate the steps to model flows of control by time ordering. [8+8]
5. (a) Draw a use case diagram to model the behavior of a cellular phone. Explain briefly.
   (b) What are the contexts, common properties and common uses of use case diagrams.
   (c) Enumerate the steps to model the context of a system. [6+6+4]
6. (a) Enumerate the steps to model the distribution of objects. Explain briefly considering a UML diagram.
   (b) Enumerate the steps to model interprocess communication. [10+6]
7. (a) What are the properties of a well-structured component diagram?
   (b) What are the contents, common properties and common uses of component diagrams? Explain briefly. [4+12]
8. (a) Write a Java program for the Loan class [8]
   (b) Draw a deployment diagram for the library system [3]
   (c) Draw a class diagram showing architectural overview of the library system [5]

⋆ ⋆ ⋆ ⋆ ⋆