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CS72

Seventh Semester B.E Degree Examination, Dec.07 / Jan. 08
Object Oriented Analysis and Design

Time: 3 hrs.
Max. Marks:100

Note : *Answer any FIVE full questions.*

1 a. With suitable example, discuss the relationship among object model, functional model and dynamic model.
   (08 Marks)
   b. What is main advantage of object – oriented development?
   (02 Marks)
   c. Explain the following : i) Objects ii) inheritance iii) Polymorphism iv) Identity
   (10 Marks)

2 a. Differentiate between association and aggregation with an example.
   (06 Marks)
   b. Explain the object oriented systems development by use case driven approach.
   (08 Marks)
   c. Explain prototyping and its types with an example.
   (06 Marks)

3 a. Briefly describe the object oriented methodologies in object oriented system development.
   (12 Marks)
   b. Explain the importance of Component – Based Development and its implementation.
   (08 Marks)

4 a. What are the advantages of UML? Explain.
   (05 Marks)
   b. Explain Interaction diagram, with examples i.e. sequence and collaboration diagrams.
   (08 Marks)
   c. Discuss the role of nested state diagrams. Give an example.
   (07 Marks)

5 a. For the library information system, Give the use – case diagram, which depicts the extends and uses relationships.
   (06 Marks)
   b. Differentiate between the following : i) Users and Actors ii) Patterns and Frame works.
   (08 Marks)
   c. Explain how Actors and Use – cases are identified for the Vainet Bank ATM system.
   (06 Marks)

6 a. Explain briefly the four different approaches that are used for identifying classes and their behaviors in the problem domain.
   (12 Marks)
   b. Define Super – sub class relationship. Give the guidelines for identifying super-sub relationships.
   (08 Marks)

7 a. Explain the different activities of the object – oriented design process in the unified approach.
   (10 Marks)
   b. What are the different types of coupling among objects or components?
   (04 Marks)
   c. Explain design patterns with an example.
   (06 Marks)

8 Write short notes on the following :
   a. Reusability.
   b. Good Design with less information content.
   c. Effective Documentation.
   d. Interaction sequence diagram.
   (20 Marks)

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CS72

NEW SCHEME

Seventh Semester B.E. Degree Examination, Dec. 06 / Jan. 07

CS / IS

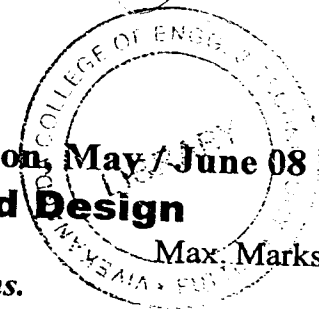# Object Oriented Analysis and Design

Time: 3 hrs.]

[Max. Marks: 100

Note: *Answer any FIVE full questions.*

1 a. What is object oriented system development methodology? How does object oriented approach differ from traditional approach? List the advantages of object oriented development. **(12 Marks)**

b. Explain the following terms:
   i) Meta classes
   ii) Objects persistence
   iii) Aggregation
   iv) Objects identity, state and behaviour. **(08 Marks)**

2 a. What is software development process? Discuss the waterfall approach of software development process. **(08 Marks)**

b. Differentiate between static and dynamic binding. **(08 Marks)**

c. Explain in detail with an example Laumbaugh's object modeling technique. **(04 Marks)**

3 a. Explain in detail the concept of macro and micro development. **(08 Marks)**

b. Compare rapid application development with component based development. **(08 Marks)**

c. Explain with a neat figure the different quality measures of high quality software. **(06 Marks)**

4 a. Explain the concept of layered approach. Discuss the three layered approach adopted for software development. **(06 Marks)**

b. Describe in detail with a neat figure the unified approach to software development. **(08 Marks)**

5 a. Explain the necessity of modeling and discuss its advantages. **(12 Marks)**

b. With a neat diagram explain: **(04 Marks)**
   i) UML activity diagram
   ii) UML collaboration diagram.
   iii) UML sequence diagram.

c. Write a short note on stero types. **(12 Marks)**

6 a. What is the need for analysis? Why is analysis a difficult task? **(04 Marks)**

b. Explain in detail the noun phases approach for identifying classes. **(05 Marks)**

c. What are the guidelines for identifying superclass subclass relation-ship? **(10 Marks)** **(05 Marks)**

7 a. Explain the design axioms and then the corollaries for object oriented design. **(10 Marks)**

b. What are public and private protocols? What is the significance of separating these two protocols? **(10 Marks)**

8 a. Explain in detail the process of designing view layer classes. **(10 Marks)**

b. Explain clearly the concept of object relation mapping. **(10 Marks)**

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Seventh Semester B.E. Degree Examination, May / June 08
Object – Oriented Analysis and Design
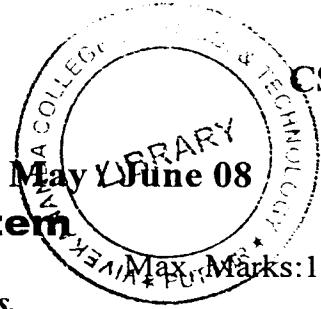
Time: 3 hrs.

Note : Answer any FIVE full questions.

Max. Marks:100

1
   a. What is the object – oriented system development methodology? Explain. **(07 Marks)**
   b. Describe the components of the unified approach. **(08 Marks)**
   c. What is an object, polymorphism, inheritance, data abstraction and protocol? **(05 Marks)**

2
   a. Explain association. Why is polymorphism useful? **(06 Marks)**
   b. Illustrate software development process. **(09 Marks)**
   c. What is the difference between objects method and object's attributes. **(05 Marks)**

3
   a. What is RAD? Why is reusability important? How does object – oriented software development promote reusability. **(08 Marks)**
   b. What is the object – oriented SDLC? Compare it with traditional approach. **(08 Marks)**
   c. What are software correspondence, correctness validation and verification? **(04 Marks)**

4
   a. What are the phases of OMT? Briefly describe each phase. **(06 Marks)**
   b. Briefly describe the Booch system development processes. **(07 Marks)**
   c. Explain and list the strength of Jacobson methodology. **(07 Marks)**

5
   a. What are the different types of modeling? Briefly describe each. **(06 Marks)**
   b. What are some of the forms of associations? Draw their UML representations. **(06 Marks)**
   c. Explain collaboration diagram and draw collaboration diagram with decimal numbering for telephone exchange. **(08 Marks)**

6
   a. What is the purpose of analysis? Why do we need analysis? List the different task or steps. **(06 Marks)**
   b. What is a use case model? Explain and draw use case diagram for library accounts and list the guidelines. **(08 Marks)**
   c. Why is documentation an important part of analysis? Give guidelines. **(06 Marks)**

7
   a. Describe the nanophrase strategy for identifying tentative classes in a problem domain. **(07 Marks)**
   b. What is the common class pattern strategy? Use Bank ATM system and explain. **(07 Marks)**
   c. Why is developing a sequence diagram a useful activity in identifying classes? Draw sequence diagram for the invalid pin use case. **(06 Marks)**

8   Draw a complete UML class – diagram
   a. For bank ATM system. **(08 Marks)**
   b. List the object – oriented design axioms and corollaries and explain relationship between coupling and cohesion. **(04 Marks)**
   c. Explain the object – oriented design process in the unified approach. **(08 Marks)**

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Seventh Semester B.E. Degree Examination, May / June 08
Distributed Operating System

Time: 3 hrs.   Max. Marks:100

Note : *Answer any FIVE full questions.*

1 a. Define a distributed operating system and explain three important features of distributed operating system.   **(08 Marks)**
   b. Describe distributed computing system based on workstation server model and write merits.   **(06 Marks)**
   c. Explain Distributed Computing Environment Components   **(06 Marks)**

2 a. Describe blocking and nonblocking types of IPC. Which is easier to implement and why? Discuss their relative advantages and disadvantages.   **(08 Marks)**
   b. Describe failure handling in message passing system.   **(06 Marks)**
   c. Write brief note on Group Communication.   **(06 Marks)**

3 a. What is a "Stub"? How are stubs generated? Explain how the use of stubs helps in making a RPC mechanism transparent.   **(08 Marks)**
   b. What is an orphan call? How are orphan calls handled in the implementation of the following types of call semantics? i) Last – one call semantics   ii) Last – of - many call semantics   iii) At least – once call semantics.   **(06 Marks)**
   c. Give an example of an application where each of the following facilities may be useful.
      i) Broad cast RPC facility   ii) Multicast RPC facility. Explain methods to implement broadcast RPC facility.   **(06 Marks)**

4 a. Explain DSM. What are the design and implementation issues of DSM? Indicate the figure.   **(08 Marks)**
   b. Discuss the relative advantages and disadvantages of using the NRNMB, NRMB, RMB and RNMB strategies in the design of DSM systems.   **(06 Marks)**
   c. What are the main causes of thrashing in a DSM system? What are the methods to solve the thrashing problem in DSM?   **(06 Marks)**

5 a. Explain clock synchronization algorithms. i) Centralized Algorithms ii) Distributed Algorithms and compare merits and demerits of both i) and ii).   **(10 Marks)**
   b. Explain distributed algorithms for deadlock detection.
      i) WFG – based distributed algorithm   ii) Probe based distributed algorithm.   **(10 Marks)**

6 a. Explain the issues in designing load balancing algorithms.   **(08 Marks)**
   b. Explain issues in designing load sharing algorithms.   **(06 Marks)**
   c. Write a note on Global scheduling algorithms.   **(06 Marks)**

7 a. Explain Process Migration and Process Migration Mechanism.   **(08 Marks)**
   b. Explain issues in designing thread packages.   **(06 Marks)**
   c. Explain File sharing semantics with figure.   **(06 Marks)**

8 Write notes on the following :
   a. Sun RPC   **(08 Marks)**
   b. 4.3 BSD unix IPC mechanism   **(06 Marks)**
   c. Election Algorithms.   **(06 Marks)**

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Seventh Semester B.E. Degree Examination, Dec.09/Jan.10
Object Oriented Modeling and Design

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions,*
selecting atleast two questions from each part.

PART – A

1 a. Explain the models in OO development. Bring out the relationship among the models.
   (08 Marks)
   b. With the help of a sample class model, explain the following :
      i) attributes and operations   ii) qualified associations   iii) multiplicity
      iv) association end names   v) generalization and inheritance.   (12 Marks)

2 a. Explain the properties of association ends.   (08 Marks)
   b. Define an event in state modeling. Explain the kinds of events.   (07 Marks)
   c. Give the general UML system for state diagram and explain.   (05 Marks)

3 a. What us an activity diagram? Explain the special constructs for activity models.   (10 Marks)
   b. What are use case models? Give the guidelines for constructing a use case model. (05 Marks)
   c. What are nested states? Explain with examples.   (05 Marks)

4 a. Explain the stages in the software development process. Which life cycle would you prefer
      in the development? Why?   (10 Marks)
   b. Identify the classes of an ATM for a bank. What criteria would you take into consideration
      to select the right classes? Explain.   (10 Marks)

PART – B

5 a. What are the steps involved in constructing an application state model.   (12 Marks)
   b. Explain any two architectural styles, suited for system design.   (08 Marks)

6 a. How would you improve the organization of a class design?   (06 Marks)
   b. How would you choose association traversal? Explain the following :
      i) One-way association
      ii) Two-way association.   (06 Marks)
   c. Write short notes on :
      i) Reverse engineering
      ii) Wrapping.   (08 Marks)

7 a. What is a pattern? Explain the model-view-controller design pattern for software
      architecture, with OMT diagram.   (05 Marks)
   b. List and explain different pattern categories. Give the differences between patterns and
      methods.   (05 Marks)
   c. Explain client-dispatcher-server design pattern.   (10 Marks)

8 a. Explain the command processor design pattern.   (10 Marks)
   b. Explain publisher-subscriber design pattern.   (05 Marks)
   c. What are idioms and styles? Explain with the help of an example, a style guide idiom.
      (05 Marks)

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