

Please write your Exam Roll No.)

Exam Roll No. ....

# END TERM EXAMINATION

FIFTH SEMESTER [B.TECH.] DECEMBER 2017

Paper Code: IT-309  
Time: 3 Hours

Subject: Object Oriented Software Engineering

Maximum Marks: 75

Note: Attempt all question as directed. Internal Choice is indicated.

- Q1 Answer the following questions: (5x5=25)
- (a) What are primary and secondary actors? Give examples.
  - (b) What is the use of stubs and Drivers in testing?
  - (c) Discuss the types of relationships and associations in class diagrams.
  - (d) What is the difference between Sequence diagrams and Collaboration diagrams?
  - (e) Discuss the benefits of OOSE over traditional SE.

## UNIT-I

- Q2 (a) Discuss various software development life cycle models. Write merits and demerits of all. (10)  
(b) What are standards involved in software development? Enlist. (2.5)

OR

- Q3 (a) What are the phases of Object Oriented Unified processing? Explain. (4)  
(b) Differentiate between verification and validation. (3)  
(c) What is the use of Requirement Elicitation? Explain at least two techniques used for requirement elicitation. (5.5)

## UNIT-II

- Q4 (a) Is there any difference between USE CASE and SCENARIO? If yes/no, explain with the help of an example. (8)  
(b) Construct a class diagram for student registration process in your university. (4.5)

OR

- Q5 (a) What are the different types of objects in Analysis model? Consider the case study of a Recycling machine, where a user can deposit recyclable bottles, cans and crates. Once the depositor deposits the items, he gets printed receipt. Create and analysis models showing the different types of objects and interaction between different objects. (12.5)

## UNIT-III

- Q6 Consider the ARENA multimedia case study (Virtual Techspace, where virtual gaming tournaments can be held, played or watched). Write the problem statement and draw state chart diagram. (12.5)

OR

- Q7 Draw interaction diagrams (Both Sequence and Communication Diagrams) for ATM machine. (12.5)

## UNIT-IV

- Q8 Explain any two of the following:- (6.25x2=12.5)
- (a) Integration Testing
  - (b) State Based Testing
  - (c) Testing Process

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# END TERM EXAMINATION

FIFTH SEMESTER [B.TECH.] DECEMBER 2017

Paper Code: IT-309

Subject: Object Oriented Software Engineering

Time: 3 Hours

Maximum Marks: 60

Note: Attempt all question as directed. Internal Choice is indicated.

- Q1 Answer the following questions: (4x5=20)
- (a) What are primary and secondary actors? Give examples.
  - (b) What is the use of stubs and Drivers in testing?
  - (c) Discuss the types of relationships and associations in class diagrams.
  - (d) What is the difference between Sequence diagrams and Collaboration diagrams?
  - (e) Discuss the benefits of OOSE over traditional SE.

## UNIT-I

- Q2 (a) Discuss various software development life cycle models. Write merits and demerits of all. (8)  
(b) What are standards involved in software development? Enlist. (2)

OR

- Q3 (a) What are the phases of Object Oriented Unified processing? Explain. (3)  
(b) Differentiate between verification and validation. (3)  
(c) What is the use of Requirement Elicitation? Explain at least two techniques used for requirement elicitation. (4)

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- Q4 (a) Is there any difference between USE CASE and SCENARIO? If yes/no, explain with the help of an example. (6)  
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- Q7 Draw interaction diagrams (Both Sequence and Communication Diagrams) for ATM machine. (10)

## UNIT-IV

- Q8 Explain any two of the following:- (5x2=10)
- (a) Integration Testing
  - (b) State Based Testing
  - (c) Testing Process

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# END TERM EXAMINATION

**FIFTH SEMESTER [B.TECH./M.TECH.] DEC. 2014-JAN.-2015**

**Paper Code: IT309**

**Subject: Object Oriented Software  
Engineering**

**Time : 3 Hours**

**Maximum Marks :60**

**Note: Attempt any five questions including Q.no.1 which is compulsory.**

- Q1** Write short notes on any five of the following:- **(4x5=20)**
- (a) System testing
  - (b) Analysis model
  - (c) Software Development Life cycle
  - (d) Software quality assurance
  - (e) Software Metrics
  - (f) Requirement Model-Action and use-case.
- Q2** (a) Differentiate between the scenario and use cases. **(5)**  
 (b) What are the activities involved during OOA phase? How the OOA is different from structured analysis? Provide the guidelines for an analyst during the OOA phase. **(5)**
- Q3** For hospital management system- **(2.5x4=10)**
- (a) Draw use-case model.
  - (b) Draw a sequence diagram for any one use case.
  - (c) Explain component diagram.
  - (d) Write use-case description of any one activity.
- Q4** (a) Describe the activities performed during requirement elicitation in detail. **(5)**  
 (b) Differentiate between coupling and cohesion in detail. **(5)**
- Q5** (a) How do we differentiate between function and non-functional requirements? Give examples of each. **(5)**  
 (b) Explain Entity class, interface class and control class in detail. **(5)**
- Q6** (a) Describe various diagrams we make in UML with example. **(8)**  
 (b) What is an entity class? How it can be used in designing database structure? **(2)**
- Q7** (a) How do we identify the relationship between the entities? **(5)**  
 (b) Explain following relationships with example:- **(5)**
- (i) Association
  - (ii) Aggregation
  - (iii) Composition
  - (iv) Dependency
  - (v) Generalization
- Q8** (a) Draw a class diagram for an employee having various attributes such as id, name, phone, email, street, city, basic sal, HRA, TA, DA. **(5)**  
 (b) Differentiate between class diagram and object diagram in detail. **(5)**
- Q9** Discuss Testing process, Testing activities and Techniques. **(10)**

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**END TERM EXAMINATION**

FIFTH SEMESTER [B.TECH./M.TECH.] - DECEMBER 2010

Paper Code: IT309

Subject: Object Oriented Software Engineering

Paper ID: 15309

Time : 3 Hours

Maximum Marks : 60

Note: Q.1 is compulsory. Attempt one question from each unit.

Q1 Consider the interactive application of railway reservation system.

Design the following:-

- (a) Entity relationship diagram. (3)
- (b) Use case diagram. (3)
- (c) Description of any one use case. (3)
- (d) Sequence diagram and a corresponding collaboration diagram. (5)
- (e) State chart diagram. (3)
- (f) Activity diagram. (3)

**UNIT-I**

Q2 (a) What are various software engineering development activities? What is the role of software life cycle models? Explain by using Spiral model. (7)  
 (b) Compare following giving examples:-  
 (i) System and models  
 (ii) Activity and tasks  
 (iii) Method and methodology (3)

**OR**

Q3 (a) What do you mean by requirement elicitation? Discuss various activities of requirement elicitation. (7)  
 (b) Compare the following giving examples:-  
 (i) Functional Requirements  
 (ii) Non-Functional requirements  
 (iii) Pseudo requirements (3)

**UNIT-II**

Q4 (a) Define model architecture. Discuss in brief design model with proper example. (5)  
 (b) Describe the activities that transform the use cases and scenarios produced during requirements elicitation into an analysis model. (5)

**OR**

Q5 (a) Describe various architecture models and their features in brief. (6)  
 (b) Can an object stand alone? Justify your answer with an example. (4)

**UNIT-III**

Q6 (a) Draw a class diagram representing a book defined by the following statement: "A book is composed of a number of parts, which in turn are composed of a number of chapters. Chapters are composed of sections." Focus only on classes and relationships. (5)  
 (b) What is Generalization and association of classes? Extend the class diagram of Q.6(a) and include the following attributes:- (5)  
 - a book includes a publisher, publication date and an ISBN,  
 - a part includes a title and a number,  
 - a chapter includes a title, a number and an abstract and  
 - a section includes a title and a number.

**OR****P.T.O.**

- Q7 (a) What are the basic building blocks of UML? (3)  
 (b) What are the four common mechanisms in UML? (3)  
 (c) Explain the architecture of a software intensive system described by five interlocking views. (4)

**UNIT-IV**

- Q8 Build the statechart diagram corresponding to the PurchaseTicket use case of figure-1. Generate test cases based on the statechart diagram using the state-based testing technique. (10)

User case name	PurchaseTicket
Entry condition	The Passenger standing in front of ticket Distributor. The Passenger has sufficient money to purchase ticket.
Flow of events	<ol style="list-style-type: none"> <li>1. The Passenger selects the number of zones to be traveled. If the Passenger presses multiple zone buttons, only the last button pressed is considered by the Distributor.</li> <li>2. The Distributor displays the amount due.</li> <li>3. The Passenger inserts money.</li> <li>4. If the Passenger selects a new zone before inserting sufficient money, the Distributor returns all the coins and bills inserted by the Passenger.</li> <li>5. If the Passenger inserted more money than the amount due, the Distributor returns excess change.</li> <li>6. The Distributor issues ticket.</li> <li>7. The Passenger picks up the change and the ticket.</li> </ol>
Exit condition	The Passenger has the selected ticket.

Figure-1

**OR**

- Q9 (a) Give a brief description of various testing activities and techniques. (3)  
 (b) There are three ways by which the client evaluates a system during acceptance testing as mentioned. Define them with example. (3)  
 (i) Shadow testing  
 (ii) Benchmark testing  
 (iii) Competitor testing  
 (c) Give an outline for following test documents:- (2+2)  
 (i) Test plan  
 (ii) Test case specifications

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## END TERM EXAMINATION

**FIFTH SEMESTER [B.TECH(CSE/IT)] NOVEMBER-DECEMBER 2018**

**Paper Code: IT-309      Subject: Object Oriented Software Engineering**

**Time: 3 Hours**

**Note: Attempt five questions in all including Q.no. 1 which is compulsory.**

**Q1 Answer following in brief: (Any Five)**

- (a) What is object orientation. How the objects & classes are identified in an object model?
- (b) Write a note on inheritance & polymorphism.
- (c) How object oriented system developments is carried out? Explain its phases.
- (d) Differentiate between Association, Aggregation, Composition, Realization relationship.
- (e) Differentiate between links and associations
- (f) In UML class diagrams, what are Boundary Classes, Control Classes, and Entity Classes? Explain using suitable diagram.
- (g) What is behavioral modeling? How constraints are handled in behavioral modeling?
- (h) What is multiple inheritance. How it can it be shown using generalization?

**Q2**

- (a) Enlist various building blocks of UML. What are the goals of UML? Discuss the advantages of using UML? In what sense UML is unified?
- (b) Discuss different views supported by UML diagrams and explain the significance of Packages? Prepare an object and state transition diagrams for priority queues or heaps storing numbers, where in the operations of the shift up and shift down are possible.

**Q3**

- (a) Write a note on Object Oriented Analysis. Briefly write the characteristics of Booch Method, the Coad and Yourdan method, Jacobson method and Raumbaugh method.
- (b) Write a note on Object Oriented Design. Discuss the importance of system design? What are activities and actions in dynamic model?

**Q4**

- (a) How the classes are identified in an object model? What is its significance? Draw a class diagram of the class student. Make necessary assumptions but clearly state them all. Clearly mark private, public and protected members.
- (b) Explain the significance of object diagrams. What are the essential characteristics of object diagram? Create an object diagram for an employee by making some assumptions.

**[2-]**

**(6+6.5=12.5)**

- Q5 (a) What are abstract classes? How it is different from a normal class? What is their significance? What are static functions?

- (b) What are components of use case model? Create a use case model for library management system. Explain 'Extends' relationship with suitable example.

**(6+6.5=12.5)**

- Q6 (a) Describe the components of activity diagram. Draw a sequence diagram for a successful login into a system by a user. Describe the components of sequence diagram.

- (b) Describe the components and uses of interaction diagrams.

**(6+6.5=12.5)**

- Q7 (a) State diagrams depict the life cycle of an object' comment. Explain the need for deployment diagrams with suitable examples. What are collaboration diagrams?

- (b) What are Components? How Components are organized? Explain the usage of component diagrams with suitable examples.

**(6.5+6=12.5)**

- Q8 (a) Differentiate between testing and debugging? Explain the Testing Life Cycle. Write a note on Object Oriented testing strategies?

- (b) Write a note on following testing in brief
  - Black Box and White Box Testing
  - Alpha and Beta Testing
  - Stress Testing
  - Regression Testing
  - Performance Testing
  - Acceptance Testing
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**(6+6.5=12.5)**

- (a) How the classes are identified in an object model? What is its significance? Draw a class diagram of the class student. Make necessary assumptions but clearly state them all. Clearly mark private, public and protected members.
- (b) Explain the significance of object diagrams. What are the essential characteristics of object diagram? Create an object diagram for an employee by making some assumptions.

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# END TERM EXAMINATION

FIFTH SEMESTER [B.TECH/M.TECH] DECEMBER 2013

Paper Code: IT-309

Subject: Object Oriented Software  
Engineering

Time: 3 Hours

Maximum Marks: 60

Note: Attempt any five questions, including Q.no. 1 is compulsory. Select  
One question from each Unit.

Q1 Answer the following questions: (10x2=20)

- (a) Walk Through.
- (b) Reusability.
- (c) Cohesion.
- (d) Discuss advantages of incremental model.
- (e) What is the need of SRS?
- (f) What is an abstract class?
- (g) What is the difference between scenario and use case?
- (h) What is polymorphism testing?
- (i) When should we choose an object oriented database?
- (j) How do we identify the Actor's in a particular system?

## UNIT-I

Q2 (a) What are different standards for developing life cycle models? (7)  
(b) Is there ever a case when the generic phases of software engineering process (3)  
do not apply? If so, describe it.

OR

Q3 (a) Describe the activities involved in requirement elicitation in detail. (8)  
(b) Distinguish between functional and non-functional requirements. (2)

## UNIT-II

Q4 Discuss the issues related to managing the analysis in a multi-team (10)  
development project.

OR

Q5 (a) Explain how OOA model is translated to OOD model. (5)  
(b) What are the main features of Test Model? (5)

## UNIT-III

Q6 (a) How is use case related to a system? (5)  
(b) What are building blocks of UML? Discuss with an example. (5)

OR

Q7 Develop a complete use case for using your debit card for a meal at restaurant. (10)

## UNIT-IV

Q8 Explain any two of the following:- (2x5=10)  
(a) Various Testing Activities.  
(b) System Testing.  
(c) Object Oriented Component Testing.

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# END TERM EXAMINATION

FIFTH SEMESTER [B.TECH/M.TECH] DECEMBER 2016 JANUARY 2017

Paper Code: IT-309

Subject: Object Oriented  
Software Engineering

Time : 3 Hours

Maximum Marks : 60

Note: Attempt all questions as directed. Internal choice is indicated.

Q1 Answer the following questions: (10x2=20)

- (a) Why is analysis required for a difficult task?
- (b) What are the challenges in designing with inheritance?
- (c) What is Random Testing?
- (d) What is Guard Condition?
- (e) Give examples of Composition and Aggregation.
- (f) What are the difference between pattern and framework?
- (g) What are Identifying Actors?
- (h) What are objects in Analysis and Process?
- (i) Differentiate between method and Process.
- (j) What are the limitations of state transition table?

## Unit-I

Q2 (a) What are the software engineering development activities? Briefly explain each of activities in detail. (8)  
(b) Differentiate between ISO 9001 and SEI – CMM quality standards. (2)

## OR

Q3 What is the need of requirement elicitation? What are the Techniques for requirements elicitation? (10)

## Unit-II

Q4 (a) Draw a Requirement model for online hotel reservation. (5)  
(b) Differentiate between different types analysis objects for a University Examination System. (5)

## OR

Q5 (a) What is Analysis Model? For a hospital System make Analysis Model and Design Model. (5)  
(b) Draw a use case diagram for the admission process in a college where management decides whether to grant admission to a student or not. (5)

## Unit-III

Q6 (a) What are structural and behavioral things in UML? Explain (5)  
(b) A publisher publishes different books. An author can write different books but for the same publisher. A contract is signed between the publisher and the author. Reports such as the number of books sold, number of complimentary copies given, Royalty amount to be paid to the author etc. are generated from the system.

Draw a class diagram and an object diagram for the above case. (5)

## OR

Q7 Discuss the activities performed during the design phase. Explain with the help of an example. (10)

## Unit-IV

Q8 Write short notes on any two: (5x2=10)

- (a) Fault Based Testing
- (b) Object Modeling Techniques
- (c) Testing process

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# END TERM EXAMINATION

FIFTH SEMESTER [B.TECH/M.TECH] DECEMBER 2015-JANUARY 2016

Paper Code: IT-309

Subject: Object Oriented Software  
Engineering

Time: 3 Hours

Maximum Marks: 60

Note: Attempt any five questions including Q.no. 1 which is compulsory.

- Q1 Write short note on the followings (any four): (4x5=20)  
(a) Unit testing  
(b) Entity class, interface class and control class.  
(c) Discuss the V model of testing.  
(d) Dimensions of Analysis Model.  
(e) Software measurements and software metrics.  
(f) Defects density and Defect removal.
- Q2 (a) Explain spiral model of software development life cycle in detail with the help of neat diagram. (5)  
(b) What are the drawbacks of waterfall model? How they are overcome by other SDLC models? Discuss in brief. (5)
- Q3 (a) What are the various methods for requirement elicitation? List all of them and explain any one in detail. (5)  
(b) SRS document is created after the requirement elicitation. List various characteristics of good SRS design. (5)
- Q4 (a) What is use-case model? Why is the use-case modeling useful in analysis? (5)  
(b) Draw a neat USE-CASE diagram for ATM cash withdrawal mechanism. Make assumptions if necessary but clearly state them. (5)
- Q5 (a) Identify various types of relationship might exists between objects. How the association is different from aggregation? (5)  
(b) What are the various standards commonly followed during software development life cycle models? (5)
- Q6 (a) Compare and contrast object-oriented analysis with the conventional approach of structured analysis during the software development process. (5)  
(b) Make a class diagram for the student schema in University automation system. Give class representation along with attribute type and visibility classifiers. (5)
- Q7 Explain all UML diagram in brief. Take an example of Hospital Management System or University Automation System and draw UML diagrams for the case study in brief. Just make one UML diagram for each type. (10)
- Q8 (a) How the test cases are derived from Use-Case? Explain five step process in detail. (5)  
(b) Consider a Use-Case diagram of "Login" in to the system. Generate test cases for it. (5)

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# END TERM EXAMINATION

FIFTH SEMESTER [B.TECH/M.TECH] DECEMBER 2016 JANUARY 2017

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**Draw a class diagram and an object diagram for the above case. (5)**

## OR

Q7 Discuss the activities performed during the design phase. Explain with the help of an example. (10)

## Unit-IV

Q8 Write short notes on **any two:** (5x2=10)  
(a) Fault Based Testing  
(b) Object Modeling Techniques  
(c) Testing process

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# END TERM EXAMINATION

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Paper Code: IT-309

Subject: Object Oriented  
Software Engineering

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## Unit-IV

Q8 Write short notes on **any two:** (5x2=10)

- (a) Fault Based Testing
- (b) Object Modeling Techniques
- (c) Testing process

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- Q1 Write short note on the followings (any four): (4x5=20)
- Unit testing
  - Entity class, interface class and control class.
  - Discuss the V model of testing.
  - Dimensions of Analysis Model.
  - Software measurements and software metrics.
  - Defects density and Defect removal.
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- Q8 (a) How the test cases are derived from Use-Case? Explain five step process in detail. (5)  
 (b) Consider a Use-Case diagram of "Login" in to the system. Generate test cases for it. (5)

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- (a) What are abstract classes? How it is different from a normal class?  
What is their significance? What are static functions?

Q5

<b>Paper Code: IT-309</b>	<b>Subject: Object Oriented Software Engineering</b>
<b>Time: 3 Hours</b>	<b>Maximum Marks: 75</b>
<b>Note: Attempt five questions in all including Q.no.1 which is compulsory.</b>	

Q1 Answer following in brief: (Any Five)

(5x5=25)

- (a) What is object orientation. How the objects & classes are identified in an object model?  
(b) Write a note on inheritance & polymorphism.  
(c) How object oriented system developments is carried out? Explain its phases.  
(d) Differentiate between Association, Aggregation, Composition, Abstraction, Generalization, and Realization relationship. Differentiate between links and associations  
(e) In UML class diagrams, what are Boundary Classes, Control Classes, and Entity Classes? Explain using suitable diagram.

- (f) What is behavioral modeling? How constraints are handled in behavioral modeling?  
(g) What is multiple inheritance. How it can it be shown using generalization?

Q2 (6+6.5=12.5)  
Discuss the advantages of using UML? In what sense UML is unified?

- (b) Discuss different views supported by UML diagrams and explain the significance of Packages? Prepare an object and state transition diagrams for priority queues or heaps storing numbers, where in the operations of the shift up and shift down are possible.

Q3 (6+6.5=12.5)  
(a) Enlist various building blocks of UML. What are the goals of UML?

- Discuss the advantages of using UML? In what sense UML is unified?  
(b) Discuss different views supported by UML diagrams and explain the significance of Packages? Prepare an object and state transition diagrams for priority queues or heaps storing numbers, where in the operations of the shift up and shift down are possible.

Q8

(6+6.5=12.5)  
(a) Differentiate between testing and debugging? Explain the Testing Life Cycle. Write a note on Object Oriented testing strategies?

- (b) Write a note on following testing in brief  
• Black Box and White Box Testing  
• Alpha and Beta Testing  
• Stress Testing  
• Regression Testing  
• Performance Testing  
• Acceptance Testing

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Q4 (6+6.5=12.5)  
(a) How the classes are identified in an object model? What is its significance? Draw a class diagram of the class student. Make necessary assumptions but clearly state them all. Clearly mark private, public and protected members.

- (b) Explain the significance of object diagrams. What are the essential characteristics of object diagram? Create an object diagram for an employee by making some assumptions.

**FIFTH SEMESTER [B.Tech(CSE/IT)] NOVEMBER-DECEMBER 2018**

**Paper Code: IT-309 Subject: Object Oriented Software Engineering**

**Maximum Marks: 75**

**Time: 3 Hours**

**Note: Attempt five questions in all including Q.no.1 which is compulsory.**

- Q1** Answer following in brief: **(Any Five)** (5x5=25)
- (a) What is object orientation. How the objects & classes are identified in an object model?
- (b) Write a note on inheritance & polymorphism.
- (c) How object oriented system developments is carried out? Explain its phases.
- (d) Differentiate between Association, Aggregation, Composition, Abstraction, Generalization, and Realization relationship. Differentiate between links and associations
- (e) In UML class diagrams, what are Boundary Classes, Control Classes, and Entity Classes? Explain using suitable diagram.
- (f) What is behavioral modeling? How constraints are handled in behavioral modeling?
- (g) What is multiple inheritance. How it can it be shown using generalization?

- Q2** (6+5.5=12.5)
- (a) Enlist various building blocks of UML. What are the goals of UML? Discuss the advantages of using UML? In what sense UML is unified?
- (b) Discuss different views supported by UML diagrams and explain the significance of Packages? Prepare an object and state transition diagrams for priority queues or heaps storing numbers, where in the operations of the shift up and shift down are possible.
- Q3** (6+6.5=12.5)
- (a) Write a note on Object Oriented Analysis. Briefly write the characteristics of Booch Method, the Coad and Yourdan method, Jacobson method and Rumbaugh method.
- (b) Write a note on Object Oriented Design. Discuss the importance of system design? What are activities and actions in dynamic model?

- Q4** (6+6.5=12.5)
- (a) How the classes are identified in an object model? What is its significance? Draw a class diagram of the class student. Make necessary assumptions but clearly state them all. Clearly mark private, public and protected members.
- (b) Explain the significance of object diagrams. What are the essential characteristics of object diagrams? Create an object diagram for an employee by making some assumptions.

- Q5** (6+6.5=12.5)
- (a) What are abstract classes? How it is different from a normal class? What is their significance? What are static functions?
- (b) What are components of use case model? Create a use case model for library management system. Explain 'Extends' relationship with suitable example.

- Q6** (6+6.5=12.5)
- (a) Describe the components of activity diagram. Draw a sequence diagram for a successful login into a system by a user. Describe the components of sequence diagram.
- (b) Describe the components and uses of interaction diagrams.
- Q7** (6+6.5=12.5)
- (a) State diagrams depict the life cycle of an object' comment. Explain the need for deployment diagrams with suitable examples. What are collaboration diagrams?
- (b) What are Components? How Components are organized? Explain the usage of component diagrams with suitable examples.

- Q8** (6.5+6=12.5)
- (a) Differentiate between testing and debugging? Explain the Testing Life Cycle. Write a note on Object Oriented testing strategies?
- (b) Write a note on following testing in brief
- Black Box and White Box Testing
  - Alpha and Beta Testing
  - Stress Testing
  - Regression Testing
  - Performance Testing
  - Acceptance Testing
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# END TERM EXAMINATION

FIFTH SEMESTER [B.TECH/M.TECH] DECEMBER 2015-JANUARY 2016

Paper Code: IT-309

Subject: Object Oriented Software  
Engineering

Time: 3 Hours

Maximum Marks: 60

Note: Attempt any five questions including Q.no. 1 which is compulsory.

- Q1 Write short note on the followings (any four): (4x5=20)  
(a) Unit testing  
(b) Entity class, interface class and control class.  
(c) Discuss the V model of testing.  
(d) Dimensions of Analysis Model.  
(e) Software measurements and software metrics.  
(f) Defects density and Defect removal.
- Q2 (a) Explain spiral model of software development life cycle in detail with the help of neat diagram. (5)  
(b) What are the drawbacks of waterfall model? How they are overcome by other SDLC models? Discuss in brief. (5)
- Q3 (a) What are the various methods for requirement elicitation? List all of them and explain any one in detail. (5)  
(b) SRS document is created after the requirement elicitation. List various characteristics of good SRS design. (5)
- Q4 (a) What is use-case model? Why is the use-case modeling useful in analysis? (5)  
(b) Draw a neat USE-CASE diagram for ATM cash withdrawal mechanism. Make assumptions if necessary but clearly state them. (5)
- Q5 (a) Identify various types of relationship might exists between objects. How the association is different from aggregation? (5)  
(b) What are the various standards commonly followed during software development life cycle models? (5)
- Q6 (a) Compare and contrast object-oriented analysis with the conventional approach of structured analysis during the software development process. (5)  
(b) Make a class diagram for the student schema in University automation system. Give class representation along with attribute type and visibility classifiers. (5)
- Q7 Explain all UML diagram in brief. Take an example of Hospital Management System or University Automation System and draw UML diagrams for the case study in brief. Just make one UML diagram for each type. (10)
- Q8 (a) How the test cases are derived from Use-Case? Explain five step process in detail. (5)  
(b) Consider a Use-Case diagram of "Login" in to the system. Generate test cases for it. (5)

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Please write your Exam Roll No.)

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# END TERM EXAMINATION

FIFTH SEMESTER [B.TECH/M.TECH] DECEMBER 2016 JANUARY 2017

Paper Code: IT-309

Subject: Object Oriented  
Software Engineering

Time : 3 Hours

Maximum Marks : 60

Note: Attempt all questions as directed. Internal choice is indicated.

Q1 Answer the following questions: (10x2=20)

- (a) Why is analysis required for a difficult task?
- (b) What are the challenges in designing with inheritance?
- (c) What is Random Testing?
- (d) What is Guard Condition?
- (e) Give examples of Composition and Aggregation.
- (f) What are the difference between pattern and framework?
- (g) What are Identifying Actors?
- (h) What are objects in Analysis and Process?
- (i) Differentiate between method and Process.
- (j) What are the limitations of state transition table?

## Unit-I

Q2 (a) What are the software engineering development activities? Briefly explain each of activities in detail. (8)  
(b) Differentiate between ISO 9001 and SEI – CMM quality standards. (2)

## OR

Q3 What is the need of requirement elicitation? What are the Techniques for requirements elicitation? (10)

## Unit-II

Q4 (a) Draw a Requirement model for online hotel reservation. (5)  
(b) Differentiate between different types analysis objects for a University Examination System. (5)

## OR

Q5 (a) What is Analysis Model? For a hospital System make Analysis Model and Design Model. (5)  
(b) Draw a use case diagram for the admission process in a college where management decides whether to grant admission to a student or not. (5)

## Unit-III

Q6 (a) What are structural and behavioral things in UML? Explain (5)  
(b) A publisher publishes different books. An author can write different books but for the same publisher. A contract is signed between the publisher and the author. Reports such as the number of books sold, number of complimentary copies given, Royalty amount to be paid to the author etc. are generated from the system.

Draw a class diagram and an object diagram for the above case. (5)

## OR

Q7 Discuss the activities performed during the design phase. Explain with the help of an example. (10)

## Unit-IV

Q8 Write short notes on any two: (5x2=10)

- (a) Fault Based Testing
- (b) Object Modeling Techniques
- (c) Testing process

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Exam Roll No. ....

# END TERM EXAMINATION

FIFTH SEMESTER [B.TECH/M.TECH] DECEMBER 2013

Paper Code: IT-309

Subject: Object Oriented Software  
Engineering

Time: 3 Hours

Maximum Marks: 60

Note: Attempt any five questions, including Q.no. 1 is compulsory. Select  
One question from each Unit.

Q1 Answer the following questions: (10x2=20)

- (a) Walk Through.
- (b) Reusability.
- (c) Cohesion.
- (d) Discuss advantages of incremental model.
- (e) What is the need of SRS?
- (f) What is an abstract class?
- (g) What is the difference between scenario and use case?
- (h) What is polymorphism testing?
- (i) When should we choose an object oriented database?
- (j) How do we identify the Actor's in a particular system?

## UNIT-I

Q2 (a) What are different standards for developing life cycle models? (7)  
(b) Is there ever a case when the generic phases of software engineering process (3)  
do not apply? If so, describe it.

OR

Q3 (a) Describe the activities involved in requirement elicitation in detail. (8)  
(b) Distinguish between functional and non-functional requirements. (2)

## UNIT-II

Q4 Discuss the issues related to managing the analysis in a multi-team (10)  
development project.

OR

Q5 (a) Explain how OOA model is translated to OOD model. (5)  
(b) What are the main features of Test Model? (5)

## UNIT-III

Q6 (a) How is use case related to a system? (5)  
(b) What are building blocks of UML? Discuss with an example. (5)

OR

Q7 Develop a complete use case for using your debit card for a meal at restaurant. (10)

## UNIT-IV

Q8 Explain any two of the following:- (2x5=10)  
(a) Various Testing Activities.  
(b) System Testing.  
(c) Object Oriented Component Testing.

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## END TERM EXAMINATION

FIFTH SEMESTER [B.TECH(CSE/IT)] NOVEMBER-DECEMBER 2018

Paper Code: IT-309 Subject: Object Oriented Software Engineering

Time: 3 Hours

Note: Attempt five questions in all including Q.no. 1 which is compulsory.

Q1 Answer following in brief: (Any Five) (5x5=25)

- (a) What is object orientation. How the objects & classes are identified in an object model?
- (b) Write a note on inheritance & polymorphism.
- (c) How object oriented system developments is carried out? Explain its phases.
- (d) Differentiate between Association, Aggregation, Composition, Realization relationship.
- (e) Differentiate between links and associations
- (f) In UML class diagrams, what are Boundary Classes, Control Classes, and Entity Classes? Explain using suitable diagram.
- (g) What is behavioral modeling? How constraints are handled in behavioral modeling?
- (h) What is multiple inheritance. How it can it be shown using generalization?

Q2

- (a) Enlist various building blocks of UML. What are the goals of UML? Discuss the advantages of using UML? In what sense UML is unified?
- (b) Discuss different views supported by UML diagrams and explain the significance of Packages? Prepare an object and state transition diagrams for priority queues or heaps storing numbers, where in the operations of the shift up and shift down are possible.

Q3

- (a) Write a note on Object Oriented Analysis. Briefly write the characteristics of Booch Method, the Coad and Yourdan method, Jacobson method and Rumbaugh method.
- (b) Write a note on Object Oriented Design. Discuss the importance of system design? What are activities and actions in dynamic model?

Q4

- (a) How the classes are identified in an object model? What is its significance? Draw a class diagram of the class student. Make necessary assumptions but clearly state them all. Clearly mark private, public and protected members.
- (b) Explain the significance of object diagrams. What are the essential characteristics of object diagram? Create an object diagram for an employee by making some assumptions.

[2-]

Q5

- (a) What are abstract classes? How it is different from a normal class? What is their significance? What are static functions?
- (b) What are components of use case model? Create a use case model for library management system. Explain 'Extends' relationship with suitable example.

(6+6.5=12.5)

Q6

- (a) Describe the components of activity diagram. Draw a sequence diagram for a successful login into a system by a user. Describe the components of sequence diagram.
- (b) Describe the components and uses of interaction diagrams.

(6+6.5=12.5)

Q7

- (a) State diagrams depict the life cycle of an object' comment. Explain the need for deployment diagrams with suitable examples. What are collaboration diagrams?
- (b) What are Components? How Components are organized? Explain the usage of component diagrams with suitable examples.

(6+6.5=12.5)

Q8

- (a) Differentiate between testing and debugging? Explain the Testing Life Cycle. Write a note on Object Oriented testing strategies?
- (b) Write a note on following testing in brief
  - Black Box and White Box Testing
  - Alpha and Beta Testing
  - Stress Testing
  - Regression Testing
  - Performance Testing
  - Acceptance Testing

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(6+6.5=12.5)

- (a) How the classes are identified in an object model? What is its significance? Draw a class diagram of the class student. Make necessary assumptions but clearly state them all. Clearly mark private, public and protected members.
- (b) Explain the significance of object diagrams. What are the essential characteristics of object diagram? Create an object diagram for an employee by making some assumptions.

**END TERM EXAMINATION**

FIFTH SEMESTER [B.TECH./M.TECH.] - DECEMBER 2010

Paper Code: IT309

Subject: Object Oriented Software Engineering

Paper ID: 15309

Time : 3 Hours

Maximum Marks : 60

Note: Q.1 is compulsory. Attempt one question from each unit.

Q1 Consider the interactive application of railway reservation system.

Design the following:-

- (a) Entity relationship diagram. (3)
- (b) Use case diagram. (3)
- (c) Description of any one use case. (3)
- (d) Sequence diagram and a corresponding collaboration diagram. (5)
- (e) State chart diagram. (3)
- (f) Activity diagram. (3)

**UNIT-I**Q2 (a) What are various software engineering development activities? What is the role of software life cycle models? Explain by using Spiral model. (7)  
(b) Compare following giving examples:-  
(i) System and models  
(ii) Activity and tasks  
(iii) Method and methodology (3)**OR**Q3 (a) What do you mean by requirement elicitation? Discuss various activities of requirement elicitation. (7)  
(b) Compare the following giving examples:-  
(i) Functional Requirements  
(ii) Non-Functional requirements  
(iii) Pseudo requirements (3)**UNIT-II**Q4 (a) Define model architecture. Discuss in brief design model with proper example. (5)  
(b) Describe the activities that transform the use cases and scenarios produced during requirements elicitation into an analysis model. (5)**OR**Q5 (a) Describe various architecture models and their features in brief. (6)  
(b) Can an object stand alone? Justify your answer with an example. (4)**UNIT-III**Q6 (a) Draw a class diagram representing a book defined by the following statement: "A book is composed of a number of parts, which in turn are composed of a number of chapters. Chapters are composed of sections." Focus only on classes and relationships. (5)  
(b) What is Generalization and association of classes? Extend the class diagram of Q.6(a) and include the following attributes:-  
- a book includes a publisher, publication date and an ISBN,  
- a part includes a title and a number,  
- a chapter includes a title, a number and an abstract and  
- a section includes a title and a number. (5)**OR****P.T.O.**

- Q7 (a) What are the basic building blocks of UML? (3)  
 (b) What are the four common mechanisms in UML? (3)  
 (c) Explain the architecture of a software intensive system described by five interlocking views. (4)

**UNIT-IV**

- Q8 Build the statechart diagram corresponding to the PurchaseTicket use case of figure-1. Generate test cases based on the statechart diagram using the state-based testing technique. (10)

User case name	PurchaseTicket
Entry condition	The Passenger standing in front of ticket Distributor. The Passenger has sufficient money to purchase ticket.
Flow of events	<ol style="list-style-type: none"> <li>1. The Passenger selects the number of zones to be traveled. If the Passenger presses multiple zone buttons, only the last button pressed is considered by the Distributor.</li> <li>2. The Distributor displays the amount due.</li> <li>3. The Passenger inserts money.</li> <li>4. If the Passenger selects a new zone before inserting sufficient money, the Distributor returns all the coins and bills inserted by the Passenger.</li> <li>5. If the Passenger inserted more money than the amount due, the Distributor returns excess change.</li> <li>6. The Distributor issues ticket.</li> <li>7. The Passenger picks up the change and the ticket.</li> </ol>
Exit condition	The Passenger has the selected ticket.

Figure-1

**OR**

- Q9 (a) Give a brief description of various testing activities and techniques. (3)  
 (b) There are three ways by which the client evaluates a system during acceptance testing as mentioned. Define them with example. (3)  
 (i) Shadow testing  
 (ii) Benchmark testing  
 (iii) Competitor testing  
 (c) Give an outline for following test documents:- (2+2)  
 (i) Test plan  
 (ii) Test case specifications

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# END TERM EXAMINATION

**FIFTH SEMESTER [B.TECH./M.TECH.] DEC. 2014-JAN.-2015**

**Paper Code: IT309**

**Subject: Object Oriented Software  
Engineering**

**Time : 3 Hours**

**Maximum Marks :60**

**Note: Attempt any five questions including Q.no.1 which is compulsory.**

- Q1** Write short notes on any five of the following:- **(4x5=20)**
- (a) System testing
  - (b) Analysis model
  - (c) Software Development Life cycle
  - (d) Software quality assurance
  - (e) Software Metrics
  - (f) Requirement Model-Action and use-case.
- Q2** (a) Differentiate between the scenario and use cases. **(5)**  
 (b) What are the activities involved during OOA phase? How the OOA is different from structured analysis? Provide the guidelines for an analyst during the OOA phase. **(5)**
- Q3** For hospital management system- **(2.5x4=10)**
- (a) Draw use-case model.
  - (b) Draw a sequence diagram for any one use case.
  - (c) Explain component diagram.
  - (d) Write use-case description of any one activity.
- Q4** (a) Describe the activities performed during requirement elicitation in detail. **(5)**  
 (b) Differentiate between coupling and cohesion in detail. **(5)**
- Q5** (a) How do we differentiate between function and non-functional requirements? Give examples of each. **(5)**  
 (b) Explain Entity class, interface class and control class in detail. **(5)**
- Q6** (a) Describe various diagrams we make in UML with example. **(8)**  
 (b) What is an entity class? How it can be used in designing database structure? **(2)**
- Q7** (a) How do we identify the relationship between the entities? **(5)**  
 (b) Explain following relationships with example:- **(5)**
- (i) Association
  - (ii) Aggregation
  - (iii) Composition
  - (iv) Dependency
  - (v) Generalization
- Q8** (a) Draw a class diagram for an employee having various attributes such as id, name, phone, email, street, city, basic sal, HRA, TA, DA. **(5)**  
 (b) Differentiate between class diagram and object diagram in detail. **(5)**
- Q9** Discuss Testing process, Testing activities and Techniques. **(10)**

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Please write your Exam Roll No.)

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# END TERM EXAMINATION

FIFTH SEMESTER [B.TECH.] DECEMBER 2017

Paper Code: IT-309  
Time: 3 Hours

Subject: Object Oriented Software Engineering

Maximum Marks: 75

Note: Attempt all question as directed. Internal Choice is indicated.

- Q1 Answer the following questions: (5x5=25)
- (a) What are primary and secondary actors? Give examples.
  - (b) What is the use of stubs and Drivers in testing?
  - (c) Discuss the types of relationships and associations in class diagrams.
  - (d) What is the difference between Sequence diagrams and Collaboration diagrams?
  - (e) Discuss the benefits of OOSE over traditional SE.

## UNIT-I

- Q2 (a) Discuss various software development life cycle models. Write merits and demerits of all. (10)  
(b) What are standards involved in software development? Enlist. (2.5)

OR

- Q3 (a) What are the phases of Object Oriented Unified processing? Explain. (4)  
(b) Differentiate between verification and validation. (3)  
(c) What is the use of Requirement Elicitation? Explain at least two techniques used for requirement elicitation. (5.5)

## UNIT-II

- Q4 (a) Is there any difference between USE CASE and SCENARIO? If yes/no, explain with the help of an example. (8)  
(b) Construct a class diagram for student registration process in your university. (4.5)

OR

- Q5 (a) What are the different types of objects in Analysis model? Consider the case study of a Recycling machine, where a user can deposit recyclable bottles, cans and crates. Once the depositor deposits the items, he gets printed receipt. Create and analysis models showing the different types of objects and interaction between different objects. (12.5)

## UNIT-III

- Q6 Consider the ARENA multimedia case study (Virtual Techspace, where virtual gaming tournaments can be held, played or watched). Write the problem statement and draw state chart diagram. (12.5)

OR

- Q7 Draw interaction diagrams (Both Sequence and Communication Diagrams) for ATM machine. (12.5)

## UNIT-IV

- Q8 Explain any two of the following:- (6.25x2=12.5)
- (a) Integration Testing
  - (b) State Based Testing
  - (c) Testing Process

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(Please write your Exam Roll No.)

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# END TERM EXAMINATION

FIFTH SEMESTER [B.TECH.] DECEMBER 2017

Paper Code: IT-309

Subject: Object Oriented Software Engineering

Time: 3 Hours

Maximum Marks: 60

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- Q3 (a) What are the phases of Object Oriented Unified processing? Explain. (3)  
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  - (b) State Based Testing
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