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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:- (3)
(i) System and models
(ii) Activity and tasks
(iii)Method and methodology

OR

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

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

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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 Buiid 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	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. 2. The Distributor displays the amount due. 3. The Passenger inserts money. 4. If the Passenger selects a new zone before inserting sufficient money, the Distributor returns all the coins and bills inserted by the Passenger. 5. If the Passenger inserted more money than the amount due, the Distributor returns excess change. 6. The Distributor issues ticket. 7. The Passenger picks up the change and the ticket.
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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