

BE - SEMESTER-IV • EXAMINATION – SUMMER • 2014

Date: 20-06-2014

Time: 10:30 am - 01:00 pm

Total Marks: 70

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**

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|------------|-----|--|-----------|
| Q.1 | (a) | Explain Object Oriented Model, Dynamic Model, Functional Model and Interaction Model & Relation among these models. | 07 |
| | (b) | Explain State Diagram Behavior. | 07 |
| Q.2 | (a) | Describe guidelines for use case Models. | 07 |
| | (b) | Explain characteristics and themes of object oriented systems in Brief. | 07 |
| | | OR | |
| | (b) | Differentiate state and event. List and explain different types of events. | 07 |
| Q.3 | (a) | Define the purpose of following terms with suitable example and UML notations with respect to class model.
(1) Qualified association (2) Association class (3) Aggregation
(4) Multiplicity (5) Metadata (6) Derived data (7) Package | 07 |
| | (b) | What is a constraint? Explain constraints on objects, constraints on generalization sets and constraints on links. | 07 |
| | | OR | |
| Q.3 | (a) | What is abstract class? Why it is required? Can concrete class be a super class? If yes, give example, if no, give reason.
Create a class hierarchy to organize the following Windows system:
Window, Scrolling Window, Panel, Canvas, Text Window, Scrolling Canvas,
Button, Choice Item, Shape, Line, Closed Shape, Ellipse, Polygon. | 07 |
| | (b) | Explain ‘ordered’, ‘bags’, ‘sequences’ in class diagram with example each. | 07 |
| Q.4 | (a) | Write Scenario and Sequence diagram for Operation of a car cruise control include an encounter with slow-moving traffic that requires you to disengage and then resume control. | 07 |
| | (b) | Which steps are required to construct an “Application Interaction Model”? Discuss in detail. | 07 |
| | | OR | |
| Q.4 | (a) | Briefly describe the steps for constructing a domain State model. | 07 |
| | (b) | Write Scenario and Sequence diagram for getting ready to take a trip in your car. Assume an automatic transmission. Don’t forget your seat belt and emergency brake. | 07 |
| Q.5 | (a) | Explain the following terms in relation to class design.
a. Refactoring b. reification | 07 |
| | (b) | Explain how to choose a Software Control Strategy | 07 |
| | | OR | |
| Q.5 | (a) | Mention the importance of analysis and design stages in software development process. Differentiate following with respect to analysis and design stages:
(i) Domain analysis vs. Application analysis (ii) System design vs. Class design | 07 |
| | (b) | Explain the tasks involved in design optimization. | 07 |
