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13MCA51

**Fifth Semester MCA Degree Examination, Dec.2015/Jan.2016**  
**Object Oriented Modeling and Design Pattern**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions.**

- 1 a. What is object oriented analysis and design? How it is different from normal analysis and design techniques? Explain with suitable example. (10 Marks)
- b. What do you mean by abstraction? Explain the different types of modeling techniques used for object oriented modeling and design. (10 Marks)
- 2 a. What is Abstract class? Explain the difference between Aggregation versus Composition with suitable example. (10 Marks)
- b. Define the following terms with example:
  - i) Multiplicity
  - ii) Association End Names
  - iii) Ordering
  - iv) Bags and Sequence
  - v) Association classes. (10 Marks)
- 3 a. What is the use of state diagram? Draw the state diagram for telephone line system. (10 Marks)
- b. What do you mean by event? Explain the signal event, change event and time event. (10 Marks)
- 4 a. Write short notes on the following :
  - i) Actor
  - ii) Use case
  - iii) Scenario
  - iv) Sequence Diagram. (08 Marks)
- b. Draw sequence diagram for online flight ticket booking system. (12 Marks)
- 5 a. Briefly describe the software development stages. (10 Marks)
- b. What do you mean by system conception? What are the ways to find new system conception? Explain in detail what a good system concept must answer? (10 Marks)
- 6 a. What do you mean by Domain State Model? Explain the steps performed in constructing a domain state model. (10 Marks)
- b. What is Application class model? Explain the steps to construct the application class models. (10 Marks)
- 7 a. What is software control strategy? Explain the different types of software control strategy. (10 Marks)
- b. Write short notes on following :
  - i) Recursive downward
  - ii) Design Optimization (10 Marks)
- 8 a. How design patterns solve design problem? How to select a design pattern? Describe the design pattern's three part scheme that underlies every pattern. (10 Marks)
- b. Explain the different pattern categories in detail. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. 2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.