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07MCA51

**Fifth Semester MCA Degree Examination, December 2010**

**Object-Oriented Modeling and Design Patterns**

Time: 3 hrs.

Max. Marks:100

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

- 1 a. What is object orientation? Explain the class modeling, with an example. (12 Marks)  
b. Draw the class model of a window management system. (08 Marks)
- 2 a. Explain the different kinds of multiple inheritance and workarounds of advanced class modeling, with an example. (10 Marks)  
b. Draw the diagram and describe the state diagram, for telephone line with activities. (10 Marks)
- 3 a. Discuss the concurrency in advanced state modeling, with an example. (10 Marks)  
b. What are the guidelines for sequence models? Explain the sequence model, with an example. (10 Marks)
- 4 a. Explain the activity model and draw the activity diagram, for stock trade processing system. (12 Marks)  
b. What are the guidelines for usecase model? (04 Marks)  
c. Consider a physical bookstore, list the actors and usecarer and draw the usecare diagram. (04 Marks)
- 5 a. What is analysis? What are the steps involved in constructing an application interaction model? Explain any three steps. (10 Marks)  
b. How would you allocate subsystems to hardware unit? Explain. (10 Marks)
- 6 a. Write short notes on :  
i) Designing algorithms  
ii) Design optimization, with reference to class design. (12 Marks)  
b. Compare the forward engineering with revere engineering, with an example each. (08 Marks)
- 7 a. What is a pattern? Explain the pattern description template. (10 Marks)  
b. Discuss the dynamics and steps of implementation of forwarder-receiver pattern, with diagrams. (10 Marks)
- 8 a. Write the structure and implement client – dispatcher – server pattern in C++ or java considering any problem specification. (10 Marks)  
b. Discuss the structure, dynamics and variants of command processor pattern. (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.

