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**Seventh Semester B.E. Degree Examination, June/July 2015**  
**Object Oriented Modeling and Design**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting  
atleast TWO questions from each part.**

**PART – A**

- 1 a. What is OO development? Explain OO methodology. What are OO themes? (10 Marks)
- b. With help of a UML, explain the following:
  - i) Qualified association
  - ii) Aggregation
  - iii) Association class
  - iv) Derived attribute
  - v) Ordering. (05 Marks)
- c. Prepare a class diagram for group of classes. Add atleast three relationships (associations, generalization). Use association names where needed and show multiplicity. School, playground, principal, book, student, teacher, cafeteria, class room, rest room, computer. (05 Marks)
- 2 a. What is an event? Explain different types of events with an example. (10 Marks)
- b. Explain state diagram and write state model for a telephone line with activities. (10 Marks)
- 3 a. What are use case models? Give the guidelines for constructing a use case model. (05 Marks)
- b. Prepare a use case diagram for an online airline reservation system. (05 Marks)
- c. What is an activity diagram? Explain the special constructs for activity models. (10 Marks)
- 4 a. What is software development process? Explain the stages of software development. (08 Marks)
- b. Explain the criteria to select a right attributes with help of an ATM system. (12 Marks)

**PART – B**

- 5 a. What is system design? Explain the reuse concept of system design. (08 Marks)
- b. Write a normal scenario for ATM process transaction use case. (02 Marks)
- c. List out the various common architectural styles. Explain any two of them. (10 Marks)
- 6 a. Distinguish between forward engineering and reverse engineering. (06 Marks)
- b. Write short notes on: i) Association travel ii) Design optimization. (10 Marks)
- c. Write briefly on wrapping. (04 Marks)
- 7 a. What is pattern? How is it categorized? (05 Marks)
- b. Explain Forwarder-Receiver design pattern with help of OMT (Object Modeling Technique) diagram. (05 Marks)
- c. Explain the dynamics of client-dispatcher-server design pattern. (10 Marks)
- 8 a. Describe the structure solution of command processor design pattern. (10 Marks)
- b. Define publish-subscriber design pattern. (02 Marks)
- c. Write down the steps to implement the counted pointer idiom. (08 Marks)