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**Seventh Semester B.E. Degree Examination, Dec.2013/Jan.2014**

**Object Oriented Modeling and Design**

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting  
at least TWO questions from each part.**

**PART – A**

- 1 a. What is object orientation? Explain briefly the stages involved in OO methodology. (10 Marks)
- b. Define the following terms with an example:
 

i) Objects	ii) Classes	iii) Class diagrams
iv) Values and Attributes	v) Operations and methods	

 (10 Marks)
- 2 a. What is an association end? What are the properties of an association end? (06 Marks)
- b. With respect to multiple inheritance, briefly discuss about i) Multiple classification, ii) Metadata. (06 Marks)
- c. Define state diagrams and state model. Draw the state diagram for telephone line with activities. (08 Marks)
- 3 a. Explain aggregation concurrency within an object with an example each. (08 Marks)
- b. Consider an online airline reservation system. You want to check airline websites to give you ideas.
  - i) List two actors. Explain relevance of each actor.
  - ii) One use case is to make a flight reservation. List four additional use cases at the comparable level of abstraction. Summarize the purpose of each use case with a sentence.
  - iii) Prepare a use case diagram for an airline reservation system. (12 Marks)
- 4 a. List and explain different stages in software development process. (10 Marks)
- b. List the steps to construct a domain state model. For an ATM bank system, prepare data dictionary for all modeling elements. (10 Marks)

**PART – B**

- 5 a. With a neat sequence diagram, explain process transaction scenario. (08 Marks)
- b. Explain the steps followed in constructing application class model. (08 Marks)
- c. What are the steps in designing a batch transformation? (04 Marks)
- 6 a. What are the steps to improve organization of class design? Explain. (08 Marks)
- b. When fine tuning classes is essential? How is it achieved? (08 Marks)
- c. Compare forward engineering and reverse engineering. (04 Marks)
- 7 a. What is a pattern? Explain briefly properties of patterns for software architecture. (08 Marks)
- b. Explain Forwarder-Receiver pattern briefly. (12 Marks)
- 8 a. Explain view handler design pattern. (08 Marks)
- b. Explain singleton design pattern that provides two idioms specific to small talk and C++. (06 Marks)
- c. Write the steps to implement the counted pointer idiom. (06 Marks)

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