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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Seventh Semester, B.E. - Computer Science and Engineering

Semester End Examination; Dec. - 2014

Object Oriented Modeling and Design

Time: 3 hrs *Max. Marks: 100*

***Note**: i) Answer any **FIVE** full questions, selecting at least **TWO** full questions from each part.*
ii) Draw the relevant UML diagrams appropriately.

PART - A

1. a. What does it mean to say that an object-oriented system is highly modular? 6

   b. What is the different between generalization and specialization with an example? 7

   c. With a suitable example, discuss the relationship among static model and dynamic model. 7

2. a. For a system under development, what kind of models are required? Discuss why? 5

   b. For preparing an assignment at college or any equivalent task. Draw an activity diagram to summarize the activities that make up this task. Use swimlanes if the task involves activities that are carried out by other people. 8

   c. Explain the OMT object model of a bank system. 7

3. a. Think of the different possible uses you could make a library computer system and draw a use case diagram to represent these use cases. 8

   b. Write the UML sequence and collaboration diagram for the telephone cell example. 7

   c. Discuss the role of nested state diagrams. Give an example. 5

4. a. Explain the following development life-cycle models:
   i) Iterative approach
   ii) Waterfall model 10

   b. List down the steps in identifying and developing a class diagram for a given application. 5

   c. Companies may employ many people, and people may work for many companies. Every employee in a company has a manager who may manage many subordinate employees. Show the relationship between the employee and company class in UML. 5

PART - B

5. a. Explain briefly the steps involved in constructing an application model with an example. 10

   b. Discus the common architectural styles used in system design, considering ATM system as an example. 10

6. a. How would you improve the organization of class design? 8

   b. Explain:
   i) Wrapping ii) Refactoring iii) Realizing use-use 12

Contd…..2

7	a.	What tasks are involved in the process of design optimization? Explain any one in detail.	10
	b.	Explain briefly with an example, the types of design patterns.	10
8	a.	Explain the following: i) Fine-tuning classes ii) Fine tuning generalizations iii) Legacy systems	12
	b.	Explain the dynamics of client-server design pattern with relevant diagram.	8

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