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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. - 2015**

**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

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| 1 a. What is object orientation? Explain its aspects with an example.  | 6  |
| b. Elaborate on the major themes that are well supported in object oriented technology.  | 6  |
| c. What is generalization? Briefly discuss the generalization of equipments.   | 8  |
| 2 a. What is a constraint with respect to a class modeling? Explain:   |    |
| i) Constraints on generalization sets  | 10 |
| ii) Constraints on links.  |    |
| b. What is an event? Explain different types of events, with an example.   | 10 |
| 3 a. Explain nested states and nested state diagram and write nested states for a phone line.                                  | 10 |
| b. Draw the use-case diagram for vending machine. What are the guidelines needed to be followed while drawing use-case models? | 10 |
| 4 a. What is software development process? Explain the stages of software development process.                                 | 10 |
| b. Explain the steps performed in constructing a domain state model, with an example.  | 10 |

### PART - B

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| 5 a. Explain the steps followed in constructing an application class model.  | 10 |
| b. Describe the architecture of an ATM system, with the help of a neat block diagram.                              | 10 |
| 6 a. Elaborate three tasks involved in design optimization.  | 10 |
| b. Explain the steps to improve the organization of a class design.  | 10 |
| 7 a. Briefly discuss the realizing associations.   | 10 |
| b. What are the outputs from reverse engineering? In brief, discuss reverse engineering tips.                      | 10 |
| 8 a. What is a pattern? Explain the model-view controller design for software architecture with OMT class diagram. | 10 |
| b. Explain the steps to implement a forward-receiver design pattern.   | 10 |

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