



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

(An Autonomous Institution affiliated to VTU, Belagavi)

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

**Semester End Examination; Dec - 2017/Jan - 2018**

**Object Oriented Modeling and Design**

*Time: 3 hrs*

*Max. Marks: 100*

*Note: Answer FIVE full questions, selecting ONE full question from each unit.*

### UNIT - I

- |      |  |    |
|------|--|----|
| 1 a. | Briefly discuss the three models to describe a system.                       | 6  |
|      | b. Compare the association class versus ordinary class with suitable figure. | 4  |
|      | c. Draw the class model for managing credit card account.                    | 10 |
| 2 a. | Explain the ternary association with suitable figure.                        | 6  |
|      | b. Explain the following with respect to aggregation :                       |    |
|      | i) Aggregation versus Composition  | 6  |
|      | ii) Propagation of operations.   |    |
|      | c. Draw and explain the different kinds of multiple inheritances.            | 8  |

### UNIT - II

- |      |   |    |
|------|---|----|
| 3 a. | Draw and explain the nested states of a phone line.   | 10 |
|      | b. Explain the use case description of a vending machine.                                       | 5  |
|      | c. Draw the Activity diagram for a stock trade processing.                                      | 5  |
| 4 a. | What is the software development process? Discuss the different stages of software development. | 10 |
|      | b. Discuss the steps to be performed in constructing a domain state model.                      | 10 |

### UNIT - III

- |      |  |    |
|------|--|----|
| 5 a. | Explain the steps involved in constructing the application class model.        | 10 |
|      | b. Draw an application class model diagram for an ATM.                         | 10 |
| 6 a. | Explain the process of breaking a system into subsystem with suitable example. | 10 |
|      | b. Draw and explain the following common Architectural styles :                |    |
|      | i) Batch Transformation  | 10 |
|      | ii) Continuous Transformation.   |    |

### UNIT - IV

- |      |  |    |
|------|--|----|
| 7 a. | Explain the steps involved in designing an Algorithm.            | 10 |
|      | b. Explain the steps for organizing a class design.              | 10 |
| 8 a. | Explain the following concepts related to implementation model : |    |
|      | i) Fine tuning classes   | 8  |
|      | ii) Fine tuning generalization.                                  |    |

- b. Explain the different approaches for the implementation of two-way association. 6
- c. Differentiate between Forward Engineering and Reverse Engineering. 6

**UNIT - V**

- 9 a. What is a pattern? Discuss the pattern categories. 10
- b. Explain the implementation of Client-Dispatcher server architecture. 10
- 10 a. Discuss the context problem and solution of a View-Handler with suitable OMT class diagram. 10
- b. Discuss the counted pointer idiom's implementation with suitable OMT class diagram. 10

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