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

(An Autonomous Institution affiliated to VTU, Belagavi)

Fourth Semester, Master of Computer Applications (MCA)

Semester End Examination; May/June - 2018

Object Oriented Modeling and Design Patterns

Time: 3 hrs

Max. Marks: 100

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

UNIT - I

- 1 a. Describe the important characteristics of object orientation with example for each. 8
- b. Write short notes on : 12
 - i) Association classes
 - ii) Generalization
 - iii) Qualified Association
- 2 a. Explain the following with examples : 10
 - i) Visibility
 - ii) Multiplicity
- b. Explain refication and constraints with examples. 10

UNIT - II

- 3 a. Define event. Explain different kinds of events with example. 10
- b. Draw and explain the state diagram for phone line. 10
- 4 a. Discuss aggregation concurrences and concurrency with in an object. 10
- b. Explain the following : 10
 - i) Transitions and Conditions
 - ii) One-shot state diagram

UNIT - III

- 5 a. With a neat diagram, explain the use case model. Discuss the guidelines for use case. 12
- b. Define Scenario. Write the scenario for the statement "John Doe logs in transmits a message from Joh Deo to the broker system". 8
- 6 a. Explain Swimlanes with example. 4
- b. Explain the software development stages. 8
- c. Discuss any four steps involved in the construction of application interaction model. 8

UNIT - IV

- 7 a. Discuss reuse plan in system design model. 10
- b. Explain the various software control strategies that can be applied in the system design. 10
- 8 a. Discuss the designing algorithm steps in class design. 10
- b. Discuss design optimization in class design model. 10

UNIT - V

- 9 a. What is a pattern? Explain with Model-View-Controller example. 8
- b. Explain the structure and dynamics of Forward-Receiver pattern. 12
- 10 a. List and explain categories of pattern. 10
- b. Explain the properties of pattern. 10