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**MCA DEGREE V SEMESTER EXAMINATION DECEMBER 2014**

**CAS 2503/2504/2505 OBJECT ORIENTED DESIGN**  
(Regular & Supplementary)

Time: 3 Hours

Maximum Marks: 50

**PART A**  
(Answer *ALL* questions)

- (15 × 2 = 30)
- I. (a) What is object-orientation?  
(b) Why we need models in software development?  
(c) What is abstraction?
  - II. (a) Define events and states.  
(b) Which are the models used in OOD?  
(c) Draw a use case diagram for an ATM.
  - III. (a) List the software development stages.  
(b) What is domain analysis?  
(c) How can you identify classes from a problem statement?
  - IV. (a) Why interaction model dominates in application analysis?  
(b) What is a sequence diagram?  
(c) How is relevant system design in software development ?
  - V. (a) What is the role of refactoring in design phase?  
(b) What is information hiding?  
(c) Write any two methods to fine tune classes.

**PART B**

- (5 × 4 = 20)
- VI. Differentiate aggregation and association with a suitable example and diagram.  
**OR**
  - VII. Prepare a class diagram for the dining philosopher problem. There are 5 philosophers and 5 forks around a circular table. Each philosopher has access to 2 forks, one on either side. Each fork is shared by 2 philosophers. Each fork may be either on the table or in use by one philosopher. A philosopher must have 2 forks to eat.
  - VIII. Define and draw the UML notation for the following:  
(i) Class                      (iii) actor  
(ii) Activity                  iv) guard condition  
**OR**
  - IX. Why we need different models to view a system. Explain the relevance of each mode.
  - X. Why problem statement is important in software life cycle? Write a problem statement for ATM network.  
**OR**
  - XI. Briefly explain the steps to construct a domain class modd.
  - XII. Briefly explain the steps to construct application interaction model.  
**OR**
  - XIII. What is reusability in design phase? Explain the reusable things in design phase.
  - XIV. Explain the steps to design algorithms in class design.  
**OR**
  - XV. Explain the steps involved in implementation modeling.