III Semester M.C.A. Examination, January 2017  
(CBCS Scheme)  
COMPUTER SCIENCE  
MCA 302 : Object Oriented Analysis and Design using UML  

Time : 3 Hours  
Max. Marks : 70  

**Instruction:** Answer **any five questions from Section A** and **any four questions from Section B.**  

**SECTION – A**  
Answer **any five questions. Each carries six marks.**  

1. Discuss the advantages of OOAD paradigm.  
2. Discuss different views of a system for UML.  
3. Explain the components of an use case diagram with an example.  
4. Describe relationships among classes with suitable illustrations.  
5. What is coupling? How does it affect flexibility of object oriented design? Explain with an example.  
6. What are state diagrams? Explain their significance in UML.  
7. Use case diagrams can be used for identifying classes. Justify.  
8. Elaborate on the reuse of libraries and frameworks.  

**SECTION – B**  
Answer **any four questions. Each carries 10 marks.**  

9. Discuss object oriented system development life cycle in detail.  
10. Discuss building blocks of Activity diagram and draw an activity diagram for a library system.  
11. Discuss class diagramming notations in detail and draw a class diagram for order processing system.
12. Discuss in detail flexibility guidelines for class diagram design.

13. What are interaction diagrams? Discuss in detail sequence diagram with a supporting example.

14. Write short notes on any two of the following.
   a) Deployment diagram.
   b) Process architecture.
   c) Reuse of patterns.
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SECTION – A

Answer any five questions each carries 6 marks:  
(5×6=30)

1. Define object state, methods and messages with examples.

2. Discuss views in UML with a neat sketch.

3. Compare inheritance versus aggregation with suitable examples.

4. Explain the importance of visibility of attributes and operations when modelling static models.

5. Discuss coupling and cohesion.

6. Explain events, signals and state machines with regard to state diagrams.

7. Substantiate how sequence diagram is different from collaboration diagram.

8. What is reuse of Framework? Differentiate between white box Framework and Black Box Framework.

SECTION – B

Answer any four questions each carries 10 marks:  
(4×10=40)

9. Discuss Object Oriented System Development Life Cycle in detail.

10. Discuss building blocks of Use Case Diagram and draw an Use Case Diagram for Library Management system.
11. Draw the class diagram for the classes and their relationships involved in ATM System.

12. Explain State diagram States in detail for the Library System with suitable sketches.

13. Discuss in detail the flexibility Guidelines for Behavioral Design.

14. Write short notes on:
   a) Deployment Diagram. 5
   b) Component Diagram. 5