

Roll No. 

--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 09

**MCA (2015 & Onward) (Sem.-5)**  
**OBJECT ORIENTED ANALYSIS & DESIGN WITH UML**  
Subject Code : MCA-504  
Paper ID : [74384]

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTIONS-A, B, C & D contains TWO questions each carrying TEN marks each and students has to attempt any ONE question from each SECTION.
2. SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in all.

**SECTION-A**

1. What is the purpose of object modelling? What types of constructs are used in object modelling? Explain.
2. a) What is Concurrency? Explain aggregation concurrency and concurrency within an object represented by state model with an example.  
b) Compare and contrast the concept of Aggregation with the concept of Association and Generalization.

**SECTION-B**

3. Elaborate in detail the various phases of SDLC.
4. What is the use of Class Design? Discuss the following in relation to class design :
  - a) Use cases
  - b) Refactoring

**SECTION-C**

5. List various UML Diagrams and discuss the purpose of each in detail.
6. Describe the activities involved in an ATM transaction. Draw the Use cases for transactions such as transaction history, deposit amount, checking account, and savings account.

### **SECTION-D**

7. What are the various OO methodologies? Discuss in detail the Jackson Structured Development.
8. Write short notes on the following :
  - a) Reverse Engineering
  - b) Open source tools for UML

### **SECTION-E**

**9. Answer the following :**

- a) What is Inheritance? What are its benefits?
- b) Define a State. Give an example.
- c) What is the difference between generic class and abstract class?
- d) Define Reusability
- e) What is SRS and what is its need?
- f) What are Collaborations?
- g) What do you mean by programming-in-the-large?
- h) What are the limitations of Plant UML tool?
- i) Explain the concept of Delegation to share behavior.
- j) What is the difference between user and an actor?