**MCAE/D-21**      **24024**

# OBJECT ORIENTED ANALYSIS AND DESIGN USING UML

## Paper–MCA-20-15

Time Allowed : 3 Hours]      [Maximum Marks : 75

**Note :** Attempt **five** questions in all, selecting **one** question from each Unit. Question No. **1** is compulsory. All questions carry equal marks.

### Compulsory Question

1. Answer the following questions in brief:      5×3=15

   (a) What is UML? Explain the meaning of "unified" in UML.

   (b) What is generalization in UML? Give one example of multiple inheritance.

   (c) Define event, activity effects, entry & exit conditions. Give one example of each.

   (d) Define actor, time actor and use case. Give suitable examples of each.

   (e) Distinguish between layers and partitions of system.

### UNIT-I

2. (a) What is modeling? Why do you model?      5

   (b) What do you mean by persistence of object? Explain by giving examples.      5

   (c) What are views in UML? Explain design view and implementation view in brief.      5

3. (a) What are structural things in UML? Explain notation and purpose of component, collaboration and node.      8

   (b) What are extensibility mechanisms of UML? Explain each with suitable examples.      7

### UNIT-II

4. (a) What is association? Explain multiplicity, qualifier, association class and bag with suitable examples.      8

(b) Explain aggregation and composition with suitable examples. Also explain the difference between them. 7

5. (a) What are elements of class diagram? Draw the class diagram for library management system. 8

(b) What is nested state? Draw a nested state diagram to make a phone call on landline. 7

## UNIT-III

6. (a) Explain different relationships among usecases with suitable examples. 7

(b) Find all actors and at least ten usecases for mobile phone and then draw usecase diagram. 8

7. (a) What is Sequence Diagram (SD)? Explain the following concepts with suitable examples related to SD life line, messages, activation box, constructor, destructor. 7

(b) What is activity diagram? Draw activity diagram to withdraw money from ATM. 8

## UNIT-IV

8. (a) What is system design? Explain the following design decisions: handling global resources and setting trade-off priorities. 8

(b) What is class design? Explain design of algorithms. 7

9. (a) What is domain class model? Explain how you find classes and associations. 8

(b) What is application interaction model? Explain how you find actors and usecases. 7