

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