

Roll No.

Total Pages : 03

MCA/D-18

10065

**OBJECT ORIENTED ANALYSIS AND
DESIGN USING UML
MCA-14-31**

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all. Q. No. 1 is compulsory.
Attempt *four* more questions selecting at least *one*
question from each Unit.

1. Answer the following questions in brief : $4 \times 4 = 16$
- (a) Explain the following terms in UML : collaboration, package, common divisions, rectification.
 - (b) Distinguish between concurrency and persistence of objects.
 - (c) Explain the following w.r.t. state modeling : entry and exit conditions, concurrency within object, guard.
 - (d) What do you mean by domain class model ? Explain in brief.

Unit I

2. (a) What are extensible mechanisms in UML ? Explain them with suitable examples. 8
- (b) What is dependency relationship in UML ? Explain different types of permission dependencies with a suitable example of each. 8
3. (a) What is Component ? What are different types of interface ? What is component diagram ? Give one example of component diagram. 8
- (b) Explain generalization and realization relationships with three examples of each. 8

Unit II

4. Explain the following concepts with examples :
Self association n-ary association, qualifier, composition, multilevel inheritance, abstract class, association class, bag. 16
5. (a) What is Object ? What are tangible and non-tangible objects ? How do you find objects, classes and relationship among them ? Explain. 8
- (b) Draw a class diagram for Banking Management System showing all possible association end names. 8

Unit III

6. (a) What are event and their attributes ? What are different types of events ? Explain with examples. 5
- (b) Explain the relationships between class model and state model. 5
- (c) What is use case diagram ? Distinguish between includes and extends relationships. 6
7. (a) What is sequence diagram ? Draw sequence diagram to send an e-Mail. 8
- (b) Draw activity diagram to process friend request in social networking website using concept of swim lanes. 8

Unit IV

8. (a) What is application interaction model ? Explain the steps of this model. 8
- (b) How can you allocated subsystems to hardware units ? Explain. 8
9. Write short notes on the following :
- (a) Identifying Concurrency 8
- (b) Hardware and Software trade-offs. 8