

Roll No.

Total Pages : 03

CMCS/M-24

24538

OBJECT ORIENTED ANALYSIS AND
DESIGN USING UML
MS-20-23

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *Five* questions in all. Question No. **1** is compulsory. Attempt *Four* more questions selecting *one* question from each Unit.

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

- (a) What is model ? Why do you use model ?
- (b) Explain different types of messages in activity modelling.
- (c) Distinguish between decision and merge node in activity modelling by giving an example.
- (d) Distinguish between partitions and layers.
- (e) How do you handle global resources of a system ? Explain.

Unit I

2. (a) Explain the following concepts : modularity, typing and persistence of objects. **7**

(b) Explain grouping things, dependency and generalization relationships in UML with examples.

8

3. (a) What are structural things in UML ? Explain purpose and notation of component, collaboration, active class with suitable examples.

8

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

7

Unit II

4. (a) What is association ? Explain the following with suitable examples : multiplicity, ternary association, link class, bag and composition.

8

(b) Explain the following : abstract class, reification and metadata.

7

5. (a) What is state modelling ? Explain the following concepts with suitable examples : time event, entry and exit conditions and aggregation concurrency.

8

(b) Draw a nested state diagram to make a phone call on landline phone.

7

Unit III

6. (a) Discuss the following associated with usecase modelling with suitable examples : generalization relationship among different elements of usecase diagram, includes and extends relationships.

8

(b) Find at least ten usecase of cell phone and draw the usecase diagram.

7

7. (a) What is activity diagram ? Draw an activity diagram to send an SMS on a mobile phone using concepts of swim lanes.

8

(b) What is sequence diagram ? Draw a sequence diagram to send an e-Mail.

7

Unit IV

8. (a) What is domain class model ? How do you find classes, associations and attributes ? Explain.

7

(b) What is application interaction model ? How do you determine system boundary, find usecases, find actors ? Explain.

8

9. Write short notes on the following :

(a) Reuse libraries

4

(b) Allocating tasks to processors

4

(c) Choosing algorithms

4

(d) Rearranging classes and operations.

3