

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**