

**MASTER OF COMPUTER
APPLICATION (MCA) (REVISED)**

Term-End Examination

June, 2024

**MCS-032 : OBJECT ORIENTED ANALYSIS AND
DESIGN**

Time : 3 Hours

Maximum Marks : 100

Note : (i) *Questions one is compulsory.*

(ii) *Attempt any **three** questions from the rest.*

1. (a) What is 'UML' ? List the models, involved in UML. Also, mention the diagrams prepared under each model of UML. 5
- (b) Describe the term 'Integrity constraints'. Also, explain the types of Integrity constraints. 5
- (c) Differentiate between Generalization and Specialization. 5
- (d) What is Object Oriented Analysis ? How it differs from Object Oriented Design ? 5
- (e) What are ternary associations ? Describe the process of mapping the ternary associations to tables, through an example. 5

- (f) What is an object ID ? Discuss the relevance of object ID in object oriented analysis and design (OOAD). 5
- (g) Why do we have entities in DFD ? How the entities in DFD differ from entities in ERD ? 5
- (h) Discuss the term data persistence with a suitable example. 5
2. (a) What is Object Model, Dynamic Model and Functional Model ? Among these models which model is most important ? Justify the answer with a suitable example. 7
- (b) What is a state diagram ? Briefly discuss the meaning of various notations used in state diagram. Draw state diagram for online reservation of Aero plane tickets. 8
- (c) Differentiate between Aggregation and Association. Give suitable example of each. 5
3. (a) How structured analysis approach differs from object oriented analysis approach ? Give two disadvantages of each approach. 5
- (b) What is a sequence diagram ? Briefly discuss its utility and the meaning of various notations used to draw it. Draw sequence diagram for sending an email to your friend. 8

- (c) Briefly discuss the meanings of various notations involved in development of DFD. Is there any relation between the number of modules present in your software, with the level of DFD ? if “Yes” then give the level of DFD that establishes the relation. Justify the answer with suitable example.

7

4. (a) Briefly discuss the term “Serialization”, with a suitable example. Also, give its utility in context of software modeling. 5
- (b) How does a good software design differ from a bad software design ? Comment on the role of UML models in software designing. 5
- (c) What do you understand by the term “Concurrency” in a transaction system ? Explain the issues involved in identification of concurrency in a system. Briefly discuss the concept of Aggregation Concurrency in a state diagram. 10
5. (a) Differentiate between following : 5 + 5
- (i) Dynamic modeling and functional modeling
 - (ii) Object oriented Databases and Relational Databases
- (b) Write short notes on the following : 5+5
- (i) Collaboration diagram and its utility
 - (ii) Sequence diagram and its utility