

**MASTER OF COMPUTER
APPLICATIONS (REVISED)/
BACHELOR OF COMPUTER
APPLICATIONS (REVISED)
(MCA/BCA)**

Term-End Examination

June, 2026

MCS-014 : SYSTEMS ANALYSIS AND DESIGN

Time : 3 Hours

Maximum Marks : 100

Weightage : 75%

Note : *Question no. 1 is compulsory. Attempt any **three** questions from the rest.*

1. (a) Explain the spiral model in system development. Discuss how it helps in risk management during the development process. 10

- (b) Describe the steps involved in database design from an Entity-Relationship (ER) diagram (illustrate this with an example). 8
 - (c) What is Joint Application Development (JAD) ? How does it facilitate the requirements gathering process ? 8
 - (d) Discuss the importance of System documentation. What are the different types of documentation produced during system development ? 7
 - (e) Compare and contrast Management Information System (MIS) and Decision Support System (DSS) with examples. 7
2. (a) Explain the concept of object-oriented analysis and design (OOAD). How does it differ from structured analysis and design ? 10

- (b) Discuss the role of feasibility studies in system analysis. Provide examples of how these studies influence system development decisions. 10
3. (a) Describe the importance of user interface design in system development. What principles should guide effective user interface design ? 10
- (b) Explain the process of system maintenance. Discuss the different types of maintenance activities involved and also discuss challenges faced during the maintenance phase. 10
4. (a) What are Data Flow Diagrams (DFDs) ? How are they used in system analysis ? Draw and explain a level-1 DFD for a Hotel Reservation System. 10
- (b) Discuss the importance of security and audit controls in information systems. How can organizations ensure the security of their system ? 10

5. Write short notes on the following : $4 \times 5 = 20$

- (a) Prototyping in system development
- (b) System coupling and cohesion
- (c) Physical *vs.* Logical Design
- (d) Process modeling in system analysis

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