

M. Sc. DEGREE END SEMESTER EXAMINATION - APRIL 2026
SEMESTER 2: COMPUTER SCIENCE (ARTIFICIAL INTELLIGENCE)
COURSE: 24P2CAIT08 : DATABASE DESIGN

(For Regular 2025 Admission and Improvement/Supplementary 2024 Admission)

Time: Three hours

Max. Weight: 30

PART A**Answer any 8 questions**

- | | Weight : 1 |
|---|-------------------|
| 1. Discuss about the role of DBA. | (CO1,U) |
| 2. Discuss Program Data Independence. | (CO1,U) |
| 3. Explain multivalued dependency. | (CO2,U) |
| 4. Differentiate primary key and Candidate key with examples. | (CO2,A) |
| 5. Discuss about spurious tuples. | (CO2,U) |
| 6. Discuss about stored procedure. | (CO3,U) |
| 7. Describe how subqueries are executed in MYSQL | (CO3,A) |
| 8. Discuss about object oriented database. | (CO4,U) |
| 9. Discuss about parallel query evaluation. | (CO4,U) |
| 10. Discuss about data model. | (CO1, U) |
| (1 x 8 = 8) | |

PART B**Answer any 6 questions**

- | | Weights : 2 |
|---|--------------------|
| 11. Explain about Three-schema Architecture. | (CO1, A) |
| 12. Explain about DBMS Interfaces. | (CO1, A) |
| 13. Explain about different constraints in SQL | (CO3, A) |
| 14. Differentiate 3NF and BCNF | (CO2, A) |
| 15. Explain the desirable properties of transaction. | (CO1, A) |
| 16. Write short notes on SQL | (CO3, A) |
| 17. Explain distributed database with its applications. | (CO4, A) |
| 18. Explain the Characteristics of Relations. | (CO2,U) |
| (6 x 2 = 12) | |

PART C**Answer any 2 questions**

- | | Weights : 5 |
|--|--------------------|
| 19. Explain about different types of Indexes? | (CO3, U) |
| 20. Define ER Diagram.What are the different types of attributes with its notation. Draw an ER diagram for a banking enterprise? | (CO2, A) |
| 21. Explain about Query Processing and optimization in Distributed Database System? | (CO4, U) |
| 22. Explain about DBMS Component and modules with diagram? | (CO1, U) |
| (5 x 2 = 10) | |

		CL	Questions	Total weight
CO1	Define and explain the fundamental concepts of database management systems, including data organization, transaction properties, database architectures, DBMS components, and the principles of data abstraction and independence.	U	3,9,10,13, 15,19	11

CO2	Design and implement effective data models, including Entity-Relationship (E-R) diagrams and relational schemas, applying normalization techniques and integrity constraints to ensure data consistency and accuracy	A	1,4,5,11, 12,21,22	15
CO3	Construct and execute SQL queries, including advanced techniques such as subqueries, joins, and stored procedures, to effectively retrieve and manipulate data within relational databases	A	6,7,13,16, 19	11
CO4	Design, analyze, and manage distributed database systems, including parallel query processing and data distribution, and demonstrate an understanding of emerging database technologies such as object-oriented and NoSQL databases, and their application	A	8,9,17,21	9

