

Roll.No.

25UAICT3004

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.

B.Sc.CS with AI - END SEMESTER EXAMINATIONS - NOVEMBER 2025
SEMESTER - III

25UAICT3004 - Database Management Systems

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Explain the role of Information Systems in data management and organizational decision-making.
2. Illustrate how data is organized and managed from data analysis to database creation.
3. Illustrate the process of converting an unnormalized table into First Normal Form.
4. Describe the concept of functional dependency in relational databases.
5. Explain the difference between homogeneous and heterogeneous data in NoSQL systems.
6. Analyse the role of the MapReduce framework in parallel data processing.
7. Illustrate the use of selection, projection, and join operations in SQL queries.
8. Evaluate the importance of exception handling in ensuring reliable PL/SQL program execution.

Section C

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. Demonstrate the process of transforming an ER model into a relational model with an example schema.
10. Examine the differences among 1NF, 2NF, 3NF, and BCNF with suitable examples.
11. Evaluate the role of XML databases in managing semi-structured data.
12. Examine how constraints like PRIMARY KEY, FOREIGN KEY, UNIQUE, and CHECK ensure consistency in relational databases.
13. Create and execute a trigger to automatically log changes in a student database whenever an UPDATE or DELETE operation occurs.
