

(FOR THE CANDIDATES ADMITTED

24UDA308

DURING THE ACADEMIC YEAR 2024 ONLY)

REG.NO. :

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI
END-OF-SEMESTER EXAMINATIONS : NOVEMBER 2025

B.Sc C.Science With D. A

MAXIMUM MARKS: 75

SEMESTER-III

TIME : 3 HOURS

PART-III

24UDA308– RELATIONAL DATA BASE MANAGEMENT SYSTEM

SECTION – A

(10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.

1. Which of the following is not a component of a DBMS?

- A) Tables B) Index C) Compiler D) Views

2. Which of the following operations is **not** part of Relational Algebra?

- A) Selection B) Projection C) Aggregation D) Union

3. Which normal form removes partial dependencies?

- A) 1NF B) 2NF C) 3NF D) BCNF

4. The SQL command used to remove all rows from a table is_____

- A) DELETE B) ERASE C) REMOVE D) TRUNCATE

5. In PL/SQL, which keyword is used to handle exceptions?

- A) HANDLE B) TRAP C) CATCH D) EXCEPTION

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES

6. Define Database Management System.

7. What is a domain in a relational model?

8. What is functional dependency?

9. Mention any two aggregate functions in SQL.

10. What is a cursor in PL/SQL?

SECTION – B

(5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.

11. a) Explain the objectives and advantages of a Database Management System with suitable examples.

(OR)

b)Identify and analyze the various components of DBMS architecture and their role in managing data efficiently.

12. a)Apply relational algebra operations on a sample relation and write the respective expressions.
(OR)

b)Explain the concept of Query by Example in relational databases.

13. a)Describe functional dependency with suitable examples. How does it help in database normalization?
(OR)

b)Define Transaction Processing in a database system. Explain the properties of a transaction with suitable examples.

14. a)Explain the different categories of SQL data types with suitable examples.
(OR)

b)Analyze a SQL query that uses aggregate functions and GROUP BY, and explain the output based on the given data.

15. a)Explain the structure and basic elements of a PL/SQL block with a simple example.
(OR)

b)Write a PL/SQL block using conditional and iterative control structures to find the sum of even numbers from 1 to 50.

SECTION – C

(5 X 8 = 40 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.

16. a)Design an ER diagram for an online course management system. Include entities, attributes, relationships, and constraints. Convert it into a relational schema.

(OR)

b)Evaluate the significance of ISA relationships, Aggregation, and Composition in complex ER modeling with appropriate examples.

17. a)Discuss Codd rules and evaluate how modern relational databases comply with or deviate from these rules.
(OR)

b)Apply domain relational calculus to formulate queries and compare it with tuple relational calculus using examples.

18. a)Discuss the structure of a Relational Database with a neat illustration. Explain the objectives of relational database design and how redundancy and anomalies are handled using normalization.

(OR)

b)What is Normalization? Explain the steps of normalization with suitable examples. Write SQL statements for the following task and explain.

19. a>Create Books table, b) Insert 3 records, c) Retrieve books priced above 500 and published after 2020, d) Update stock of a specific BookID. Explain each query.

(OR)

b) Create a SQL script that includes constraints, joins, and subqueries for a hospital management system involving patients and doctors.

20. a)What is Exception Handling in PL/SQL?

(OR)

b)With suitable examples, discuss the role of Cursors, Functions, and Packages in PL/SQL. Explain their structure and advantages in database programming.