

(FOR THE CANDIDATES ADMITTED

24UAI412

DURING THE ACADEMIC YEAR 2024 ONLY)

REG.NO.

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : MAY 2026

BSc.CS WITH AI & ML

MAXIMUM MARKS: 75

SEMESTER IV

TIME : 3 HOURS

PART - III

24UAI412 – DATABASE SYSTEM CONCEPTS

SECTION – A

(10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS. (K1)

1. The three-schema architecture consists of_____
a) Physical, Logical, View levels b) Internal, External, Conceptual levels
c) User, System, Network levels d) File, Record, Field levels
2. _____ SQL command is used to create a table.
a) CREATE b) INSERT c) UPDATE d) SELECT
3. Functional dependency is represented as_____
a) $A \rightarrow B$ b) $A + B$ c) $A = B$ d) $A * B$
4. Who proposed the relational database rules known as Codd's rules?
a) Larry Ellison b) E. F. Codd c) Charles Bachman d) Edgar Frank
5. A cursor in PL/SQL is used to_____
a) Store procedures b) Process query results row by row
c) Create tables d) Define triggers

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES

(K2)

6. What are the fundamental relational algebra operations?
7. Which aggregate function is used to count the number of rows?
8. Define First Normal Form (1NF)
9. What is DDL in SQL?
10. Define PL/SQL

SECTION – B

(5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a)Elucidate the purpose of database systems
(OR)
b)Explain the structure of relational databases and discuss keys and integrity constraints.
12. a)Implicate the basic structure of SQL queries.
(OR)
b) Describe authorization in SQL and explain the GRANT and REVOKE commands.

13. a) Explain the Entity–Relationship (E-R) Model and its components.
(OR)
b) Define NoSQL databases and explain the four types of NoSQL databases.
14. a) Explain Oracle tools and the benefits of SQL.
(OR)
b) Depict SQL data types and data constraints.
15. a) Describe the architecture of PL/SQL.
(OR)
b) Enlighten error handling in PL/SQL with suitable examples.

SECTION – C**(5 X 8 = 40 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K4 (Or) K5)**

16. a) Describe the three-schema architecture and explain database architecture in detail.
(OR)
b) Discuss fundamental and additional relational algebra operations with suitable examples.
17. a) Write a note on Set Operations and aggregate functions with examples.
(OR)
b) Explicate data types, schemas, and integrity constraints in SQL.
18. a) Discuss functional-dependency theory and decomposition using functional dependencies with examples.
(OR)
b) Compare Relational databases and Non-relational (NoSQL) databases. Explain the concepts of documents and collections in NoSQL.
19. a) Illustrate DDL, DML, DCL, and TCL commands in SQL with examples.
(OR)
b) Discuss Joins and SQL Operators with suitable examples.
20. a) Describe PL/SQL data types and control structures with examples.
(OR)
b) Explain triggers in PL/SQL and describe different types of triggers.

Ethical paper
