

**FOURTH SEMESTER B. Sc. DEGREE EXAMINATION, APRIL 2024****(Supplementary - 2018 Admission)****COMPUTER SCIENCE****CBCS4B05T: DATABASE MANAGEMENT SYSTEMS AND RDBMS****Time: 3 Hours****Maximum Marks: 80****SECTION A: Answer *all* questions. Each carries 1 mark**

1. Explain the term database state.
2. What is an identifying relationship?
3. Name the dependency used in INF.
4. What are spurious tuples?
5. Define the term database schema.
6. What is a query in SQL?
7. What is a transaction?
8. What are stored attributes and derived attributes?
9. What is the purpose of EXIT statement?
10. What does DML stand for?

**(10 × 1 = 10 Marks)****SECTION B: Answer *all* questions. Each carries 2 marks.**

11. Illustrate the function of the DROP TABLE command.
12. What is a stored procedure?
13. What is meant by logical data independence? Explain its importance.
14. Explain the CREATE TABLE command in SQL.
15. What is subschema? What are its advantages?
16. Discuss the various anomalies in normalization.
17. What is meant by a trivial functional dependency?
18. What is write-write conflict?

**(8 × 2 = 16 Marks)****SECTION C: Answer any *six* questions. Each carries 4 marks.**

19. What is data redundancy? Explain the problem of data redundancy with suitable examples.
20. Explain 3NF and BCNF with examples.

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21. Explain the ACID properties with examples.
22. Describe the extended ER features specialization and generalization.
23. Explain the difference between lossless and lossy decomposition.
24. Discuss the aggregate functions with examples.
25. Elaborate on the purpose of the project operation in relational algebra with suitable examples.
26. What is a view in SQL? How do we create a view from multiple tables?
27. What are triggers? How can you define and use triggers?

**(6 × 4 = 24 Marks)**

**SECTION D: Answer any *three* questions. Each carries 10 marks.**

28. What is the use of NOT NULL and CHECK constraint? Explain how the constraints are defined in SQL with examples.
29. Describe the three schema architecture of DBMS.
30. Draw an ER diagram for the following application from the manufacturing company.
  - a. Each supplier has a unique name.
  - b. More than one supplier can be located in the same city.
  - c. Each part has a unique part number.
  - d. Each part has a colour.
  - e. A supplier can supply more than one part.
  - f. A part can be supplied by more than one supplier.
  - g. A supplier can supply a fixed quantity of each part.
31. Explain the concept functional dependency, multi-valued dependency and join dependency with examples.
32. Describe the various DDL statements in SQL.

**(3 × 10 = 30 Marks)**