

**2023**

Time : 3 Hours

Full Marks : 80

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Answer five questions, in which

Q. No.-1 is Compulsory.

1. Choose the correct answer of the following:
  - (a) The most important schema for application programmers is:
    - (i) Physical level
    - (ii) Logical level
    - (iii) Conceptual level
    - (iv) External level
  - (b) Rollback in a database is \_\_\_\_\_ statement.
    - (i) DDL
    - (ii) DML
    - (iii) DCL
    - (iv) TCL
  - (c) SQL stands for:
    - (i) Structured Query Language
    - (ii) Simple Query Language
    - (iii) Sequential Query Language
    - (iv) None of these
  - (d) Database schema is written in:
    - (i) HLL
    - (ii) DML
    - (iii) DDL
    - (iv) DCL
  - (e) In an E-R diagram a relationship is represented by \_\_\_\_\_.
    - (i) Ellipse
    - (ii) Rectangle
    - (iii) Rectangle with rounded corner
    - (iv) Diamond
  - (f) To remove duplicate row, \_\_\_\_\_ qualifier must be specified.
    - (i) Unique
    - (ii) Only
    - (iii) Distinct
    - (iv) Single

(g) If you want to undo a GRANT, you should use:

- (i) REVOKE
- (ii) UNDO
- (iii) UNGRANT
- (iv) DELETE

(h) Column in a database relation is also called\_\_\_\_\_.

- (i) Entity
- (ii) Tuple
- (iii) Relation
- (iv) Attribute

2. What is normalization in RDBMS? Explain 1NF, 2NF, 3NF and BCNF with suitable examples.
3. Explain all types of data model used in DBMS.
4. Compare and contrast the traditional file based system with database approach.
5. Explain all basic set of operation used in relation algebra with suitable example.
6. What is database anomalies? Explain update, insertion, deletion anomalies with suitable example.
7. Explain domain constraint, primary key constraint, integrity constraint used on relational database with suitable example.

8. State different language used in database.

9. Write short notes on any two of the following:

- (a) Functional dependencies
- (b) E-R diagram
- (c) Metadata
- (d) Referential integrity

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