

2024

(Session : 2022-25)

Time : 3 hours

Full Marks : 60

Pass Marks : 24

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

The figures in the margin indicate full marks.

Answer from both the Groups as directed.

**Group – A
(Compulsory)**

1. Choose the correct answer of the following :

1×10 = 10

- (a) Which of the following is/are correct about DBA ?

- (i) Define Schema, storage and access method
- (ii) Granting of authorization for data access
- (iii) Periodically backup of database.
- (iv) All of these

(b) During transaction before commit which of the following statement is done automatically in case of shutdown ?

- (i) Commit
- (ii) Rollback
- (iii) View
- (iv) Flashback

(c) What is relation in RDBMS ?

- (i) Row (ii) Record
- (iii) Table (iv) Redundancy

(d) Which of the following is not a level of abstraction of DBMS ?

- (i) Structural level (ii) Physical level
- (iii) Logical level (iv) View level

(e) Which of the following is a set of DML command ?

- (i) Insert, Create, Delete
- (ii) Insert, Update, Delete
- (iii) Insert, Drop, Delete
- (iv) Insert, Alter, Delete

(f) The overall design of database is called :

- (i) Schema (ii) Structure
- (iii) Model (iv) Instance

- (g) Referring the below schema, which attribute(s) is/are appropriate for being a key attribute

Employee-detail (Name, Designation, DOB, Salary, City)

- (i) {Name} (ii) {Name, City}
(iii) {Salary} (iv) None of these
- (h) Which of the following is the property of transaction that protect data from system failure ?
- (i) Atomicity (ii) Consistency
(iii) Isolation (iv) Durability
- (i) Which of the following option specify how many instances of an entity set relate to one instance of another entity set ?
- (i) Redundancy (ii) Atomicity
(iii) Cardinality (iv) Ordinality
- (j) An entity that does not have sufficient attribute to form a primary key is termed as :
- (i) Weak entity
(ii) Strong entity
(iii) Both (i) and (ii)
(iv) None of these

2. How DBMS overcomes the drawbacks of conventional file system ? 5

Group – B

Answer any **three** of the following questions :

$$15 \times 3 = 45$$

3. (a) What is data independence in DBMS ?
(b) Explain briefly Codd's twelve rules.
4. (a) Write difference between generalization and specialization.
(b) Explain different fundamental operations of relational algebra.
5. (a) What do you understand by transitive functional dependency.
(b) Explain different DDL command with syntax and example.
6. (a) What are different E-R notation used in database schema design ?
(b) What is normalization ? Explain 1NF, 2NF and 3NF with example.
7. (a) What is primary purpose of join operation in DBMS ?
(b) Define transaction. Explain different states of transaction with a neat diagram.

