

Roll No. ....

Total Pages : 03

MCA/D-18

10068

DATABASE MANAGEMENT SYSTEM

MCA-14-34

Time : Three Hours]

[Maximum Marks : 80

**Note :** Attempt *Five* questions in all. Q. No. 1 is compulsory. Attempt *four* more questions selecting *one* question from each Unit. All questions carry equal marks.

**(Compulsory Question)**

1. Write short notes on the following : **8×2=16**
- (a) Super key and foreign key
  - (b) Complex and multivalued attributes
  - (c) Alter and update statement
  - (d) Delete Statement
  - (e) Trivial and non-trivial functional dependency
  - (f) Domain key normal form
  - (g) Temporary update problem
  - (h) Granularity of data items.

**Unit I**

2. (a) Discuss the properties of database management system. How database achieve abstraction and integration ?

- (b) What is database schema and instances ? Discuss database functions and interfaces. **8+8=16**
3. (a) Differentiate between entity, entity type and entity set. How entity is represented in ER diagram ?
- (b) What is Relational Algebra ? Discuss set-oriented operations with syntax and suitable example. **8+8=16**

## Unit II

4. (a) Discuss data types in SQL. Explain schema change statement in SQL.
- (b) Draw and explain basic structure of ORACLE. **8+8=16**
5. (a) Explain queries and sub-queries and SQL. How queries are executed ?
- (b) What is Network Data Model ? How does it differ from hierarchical data model ? **8+8=16**

## Unit III

6. What is Normal Form ? Why we need Normalization ? Discuss the normal form based on primary key with illustration. **8+8=16**

7. What are the objectives of system design ? What different activities are performed in logical and physical design ?

8+8=16

#### Unit IV

8. (a) What are the properties of transaction ? Discuss Serializability of Schedules.

- (b) Explain multi-version techniques of concurrency technique.

8+8=16

9. (a) What do you understand by database recovery ? Why is it required ?

- (b) Discuss the possible strategy to ensure database security.

8+8=16