

DATABASE MANAGEMENT SYSTEMS

Time: 3 Hours

Total Marks: 70

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief.

2 x 7 = 14

- a. What do you mean by DBMS?
- b. How entity sets converted to relations?
- c. Define joins in relations
- d. Write the ways to declare key constraints.
- e. Define secondary index.
- f. What do you mean by query plan?
- g. How compilation of queries is done?

SECTION B

2. Attempt any *three* of the following:

7 x 3 = 21

- a. Describe evolution of database systems.
- b. Write down the basics for relational model. How E/R diagrams can be converted to relation designs?
- c. Discuss simple queries and queries involving more than one relation.
- d. Explain various indexes on sequential files.
- e. Discuss various issues and models for resilient operations.

SECTION C

3. Attempt any *one* part of the following:

7 x 1 = 7

- (a) Discuss various elements of E/R model.
- (b) Explain modeling of constraints in E/R model.

4. Attempt any *one* part of the following:

7 x 1 = 7

- (a) Write short note on design of relation database schemas.
- (b) Discuss extended operators of relational algebra.

5. Attempt any *one* part of the following:

7 x 1 = 7

- (a) Discuss relation schema, view and database modifications.
- (b) Explain keys, foreign keys and constraints on attributes and tuples.

6. Attempt any *one* part of the following:

7 x 1 = 7

- (a) Discuss compressed bitmaps and managing bitmap indexes.
- (b) Explain scanning tables and parameters for measuring costs.

7. Attempt any *one* part of the following:

7 x 1 = 7

- (a) What do you mean by serial and serializable schedules? Explain conflict serializability.
- (b) Discuss concurrency control by timestamps.