

Roll No.....

10376

MCA/D-13

DATA BASE SYSTEMS

Paper-MCA-301

Time allowed : 3 hours]

[Maximum marks : 80

Note: The candidates are required to attempt five questions in all. Question No. 1 is compulsory. In addition to compulsory question, student will have to attempt four more questions selecting one question from each unit.

1. Write short note on the following:

- (a) Multilevel and complex attribute
- (b) Data Sublanguage
- (c) Drop, Delete and Truncate commands of SQL
- (d) Oracle Data – Blocks
- (e) Domain Key normal form
- (f) Full and partial functional dependencies
- (g) Lost update problem
- (h) Granularity of Data items.

8x3=24

Unit-I

2. (a) Define database schema and database instance. Discuss the mapping among the three level of database services.

(b) Discuss the various constraints used over relations.

7+7=14

3. (a) What is E-R Modeling ? Discuss the component of E-R model.

(b) What do you mean by participations of entities in a relationship? Discuss binary and ternary relationships.

7+7=14

Unit-II

4. (a) What was CODASYL ? Name the data model proposed by DBTG. Explain the advantages and disadvantages of this model.

(b) What is Oracle instance? Discuss the basic structure of Oracle.

7+7=14

5. What is SQL? How you will differentiate between SEQUEL and SQL ? What are the different SQL data types? Explain with examples.

Unit-III

6. (a) What are the factors that are analyzed during the requirement analysis phase of data base design ?

(b) What do you mean by functional dependencies? Differentiate between transitive and non-transitive functional dependencies. 7+7=14

7. (a) What do you mean by anomalies ? How the anomalies can be removed by using the normal form based on the primary key? Illustrate with the help of suitable examples.

Unit-IV

8. (a) What are the main password -related threats to the security of data in the database ?

(b) Explain the distinction between the terms serial schedule and serializable schedule. 7+7=14

9. (a) What do you mean by Concurrency ? Discuss the time stamp ordering techniques for concurrency control.

(b) Differentiate between system crash and media failure. How transaction log file is used in forward and backward recovery? 7+7=14