B.E. Computer Technology Sem-VII
CT703 - Database Management Systems

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Notes : 1.   All questions carry equal marks.
         2.   Due credit will be given to neatness and adequate dimensions.
         3.   Assume suitable data wherever necessary.

1. a) Explain the levels of data abstraction.   **8**

    b) Explain the applications of databases with example.   **8**

OR

2. a) Discuss file processing system with database management system.   **8**

    b) What do you mean by data model? Discuss the various data models.   **8**

3. a) Design a relational database for a university registrar's office. the office maintains data about each class, including the instructor, the number of students enrolled, and the time and place of the class meetings, for each student class pair, a grade is recorded.   **8**

    b) Consider the insurance database   **8**
         person (<u>SS#</u>, name, address)
         car (<u>License</u>, year, model)
         Accident (<u>date</u>, <u>driver</u>, damage-amount)
         owns (<u>SS#</u>, <u>license</u>)
         log (<u>license</u>, <u>date</u>, <u>driver</u>)
           fig 1. Insurance database

    1) Find the total number of people whose cars were involved in accidents in 1989,

    2) Find the number of accidents in which the cars belonging to "John Smith" were involved.

    3) Add a new customer to the database.

    4) Delete the Mazda belonging to "John Smith".

OR

4. a) What is a view? How the view is constructed in SQL. Explain with example.   **8**

    b) Explain the fundamental operators of relational algebra with example.   **8**

5. a) Discuss Normalization. Explain the update anomalies.   **8**

    b) Explain the algorithm for finding the closure of attribute sets.   **8**

OR

6. a) List all functional dependencies satisfied by the relation. **8**

A	B	C
a_1	b_1	c_1
a_1	b_1	c_2
a_2	b_1	c_1
a_2	b_1	c_3

   b) Discuss 3NF with example. **8**

7. a) Explain ACID properties with example. **8**

   b) Discuss Shadow paging technique. **8**

OR

8. a) What is serializability? Explain conflict serializability. **8**

   b) Explain the modes in which lock will be applied on as data item. Illustrate with example. **8**

9. a) What do you mean by distributed database system. Discuss. **8**

   b) Explain spatial databases. **8**

OR

10. Write note on **any four.** **16**

   1) Parallel system.

   2) Centralized system.

   3) Client server system

   4) Geographic databases

   5) Multimedia databases.

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