(3 Hours) **Total Marks: 80**

NOTE:
1. Question no 1 is compulsory question
2. Attemp any three questions from the remaining
3. Assume suitable data if necessary.
4. Figures to the right indicate full marks.

1. (a) Define the following terms. (10)

Trigger,Deadlock, Weak Entity, ,Access Path ,Transaction, Metadata,Assertion, Functional Dependency, Concurrency Control,Constraints

1. (b) Explain Referential Intrgrity and Authorization in SQL. (10)

2. (a) Explain Cost Based Query Optimization (10)

2 (b) Explain implementation of atomicity and durability. (10)

3 (a) Explain lock based , timestamp based,validation based protocols. (10)

3 (b) What is Normalization ?
Explain 1NF, 2NF, 3NF,and BCNF with examples. (10)

4 Consider a AIRLINE Reservation System,

(a) Draw E-R Diagram.Assume suitable data (10)

(b) Convert the E-R diagram into Relational Model (10)

OR

4 (a) Draw E-R Diagram for HOTEL Management System.Assume suitable data (10)

(b) Convert the E-R diagram Que 4(a) into Relational Model (10)

5 (a) Explain Relational algebra queries and Relational calculus with examples (10)

5 (b) Explain aggregate functions and set operations in SQL with examples (10)

6 (a) Explain data control commands in SQL with examples. (10)

6 (b) Explain sort-merge join algorithm in query processing. (10)

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