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BT-4/M-23 44185

DATABASE MANAGEMENT SYSTEMS

PC-IT-210A

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. What is Schema ? Explain Three Schema architecture of DBMS ? Differentiate between logical and physical data independence. **15**

2. (a) Explain benefit of EER model over ER model and also explain aggregation generalization, specialization using suitable example. **8**

(b) What is data model ? Differentiate between hierarchical and network database model. **7**

Unit II

3. (a) In what sense relational algebra is differ from relational calculus and in what sense they are similar ? Give an example for Aggregate functions of Relational Algebra. **8**

(b) Explain the various types of constraints in DBMS using suitable example. 7

4. (a) What is View ? How can we create, delete and modify view in SQL ? 7

(b) Explain the basic DDL and DML commands in SQL using suitable examples. 8

Unit III

5. (a) What is meant by the closure of functional dependencies ? Illustrate with an example. 8

(b) State BCNF. How does it differ from 3NF ? 7

6. Define Normalization. What is its significance ? Explain the various types of normal forms along with suitable examples. 15

Unit IV

7. (a) Explain ACID properties of transaction management. 7

(b) Differentiate between deferred update and immediate update recovery techniques. 8

8. (a) What is two-phase locking ? How does it guarantee serializability ? 7

(b) Draw transaction state diagram and describe each state that a transaction goes through during its execution. 8