

Roll No.

Total Pages : 03

BT-4/M-24

44221

DATABASE MANAGEMENT SYSTEM

PC-CS-AIDS-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. (a) With the help of suitable example, differentiate between file-based information system and database management system.
- (b) What is data independence ? Discuss the same with the help of three schema architecture.
2. (a) What do you mean by entity relationship model ? Draw the various symbols used in E-R model.
- (b) Discuss the concept of generalization and aggregation with the help of an example.

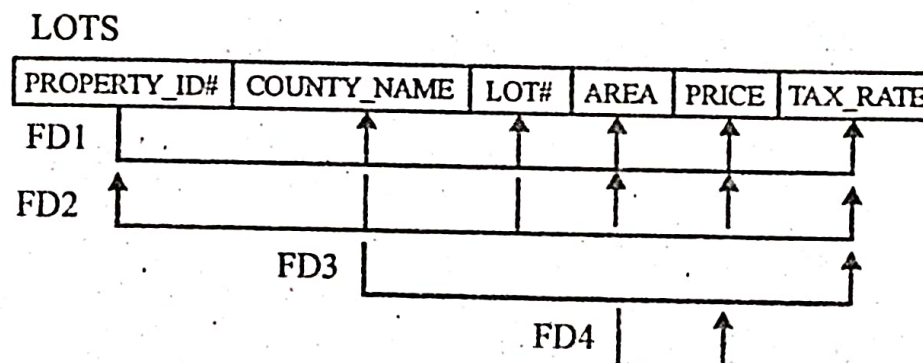
Unit II

3. (a) What is relational algebra ? Explain various relational algebra operators with suitable example of each.
- (b) What do you mean by relational calculus ? Explain along with its various types.
4. (a) With the help of suitable syntax, discuss three commands each of DDL, DML, and DCL.
- (b) What are Views ? How a view is different from a table ? Give the syntax to create, delete and drop the view.

Unit III

5. What do you mean by functional dependencies ? Also, discuss the various anomalies while designing a database. Discuss the same with the help of suitable example.
6. What is Normalization ? Why is it required ? Explain various normal forms with the help of given example.

Explain :



Unit IV

7. What is Serializability ? Discuss the same along with its various types. Also, check whether that the given schedule is conflict serializable or not :

	Transaction T ₁	Transaction T ₂	Transaction T ₃
Time ↓	read_item(X); write_item(X);		read_item(Y); read_item(Z);
	read_item(X); write_item(X);	read_item(Z); read_item(Y); read_item(Y); read_item(X); read_item(X);	read_item(Y); read_item(Z);

8. (a) Discuss Basic Time Stamp Ordering concurrency control algorithm.
- (b) What is database recovery ? Explain shadow paging recovery method with the help of suitable example.