

BT-3/D-14

8301

## DATABASE MANAGEMENT

CSE-201-E

Time : Three Hours]

[Maximum Marks : 100

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

### Unit I

1. (a) Explain characteristics of Database approach.  
Mention various advantages of using DBMS approach.
- (b) Explain Network and Hierarchical data models in detail with example.
2. (a) What is difference between 2 tier and 3 tier client server architecture with example.
- (b) Define the following terms :  
Meta data, Schema, DDL, DML, Query language, Primary key, Foreign key, composite attribute, Multivalued attribute, Derived attribute.

### Unit II

3. (a) List the operations of relational algebra and purpose of each with example.



- (b) In what sense relational calculus differ from relational algebra and in what sense are they similar ?
4. (a) Explain B trees and various operations implemented on it with example.
- (b) Explain hashing technique in detail. How can we use hashing in direct file access ?

### Unit III

5. (a) What is Functional Dependency ? Explain various rules of it.
- (b) What is QBE ? Also explain various operations in it.
6. (a) What is difference between BCNF and 3NF. Explain with example.
- (b) Explain key constraint, domain constraint, integrity constraint and referential integrity constraint in detail.

### Unit IV

7. (a) What is parallel database ? Discuss its advantages and disadvantages.
- (b) What are the various types of topologies used in distributed database ? Also discuss advantages and disadvantages of distributed database.
8. (a) Explain the Lock based protocol and Time stamping protocol.
- (b) What do you mean by transaction ? Explain ACID properties associated with it. Explain various operations performed on it with example.