

BT-3/DX

8301

DATABASE MANAGEMENT SYSTEMS

Paper : 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) What is a Weak entity ? How is it represented in E-R diagram ? Explain using suitable example.
(b) What are the different views of data ? What is the difference between logical data independence and physical data independence ? What are the advantages of data independence ?
2. (a) Define following : Primary Key, Foreign Key, Super Key, Candidate Key, Secondary Key.
(b) Differentiate between Network and Hierarchical models.

UNIT-II

3. (a) What is the order p of a B tree ? Discuss the structure of B-tree nodes.
(b) What do you understand by Theta join, Equijoin, and Natural join ? Explain using suitable examples.
4. (a) What is meant by safe expression in relational calculus ?
(b) Differentiate between UNION and OUTER UNION.
(c) Explain the meaning of Universal quantifier (\forall) and Existential quantifier (\exists) using examples.

UNIT-III

5. Differentiate between following using suitable examples :
 - (a) Entity integrity constraint and Referential integrity constraint.
 - (b) Functional dependency and Transitive dependency.
 - (c) First Normal form and Second normal form.
6. (a) What do you understand by insertion/deletion/update anomalies ?
(b) Using an example show that BCNF is more desirable than 3NF.

UNIT-IV

7. What do you understand by Concurrent processing ? What are the problems with it ? Give a brief overview of the locking techniques for concurrency control.
8. (a) Distinguish between Redo and Undo recovery techniques.
(b) What do you understand by Serializability of schedules ?