

Total No. of Questions :12]

SEAT No. :

P2447

[Total No. of Pages :3

[5153] - 81

T.E. (Computer)

DATABASE MANAGEMENT SYSTEMS

(2008 Pattern) (Semester - I) (310241)

Time : 3 Hours]

[Max. Marks :100

Instructions to the candidates:

- 1) *Answers to the two sections should be written in separate answer books.*
- 2) *Answer any three questions from each section.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Figures to the right side indicate full marks.*
- 5) *Assume suitable data, if necessary.*

SECTION-I

- Q1)** a) Explain data abstraction. **[4]**
b) Draw and explain overall structure of Database management system. **[10]**
c) What are advantages of DBMS over normal file system? **[4]**

OR

- Q2)** a) Explain the concept of primary key, candidate key, super key and Foreign Key with suitable examples. **[6]**
b) What is ER diagram and Extended ER diagram? Explain with Example. **[6]**
c) Explain different data models Hierarchical, Network and Object Relational Model. **[6]**

- Q3)** a) Write note on Database Modification using SQL Insert, Update and Delete Queries. **[8]**
b) Explain Basic Operations in Relational Algebra with suitable example. **[8]**

OR

P.T.O.

- Q4)** a) Write short note DDL, DML and DCL. [8]
b) Explain concept of stored procedures, Cursors, triggers and assertions. [8]
- Q5)** a) What are various database anomalies that lead us to redesign the database? [6]
b) What is normalization? Explain First Normal Form (1NF) with example. [4]
c) Explain Partial dependency and Transitive Dependency with suitable example. [6]

OR

- Q6)** a) Write short note on canonical cover. [4]
b) What is Second Normal Form (2NF)?, Explain how to convert a relation in 1NF to 2NF. [6]
c) Explain 3NF and BCNF. [6]

SECTION-II

- Q7)** a) Explain concept of indices and explain any two types of Indices. [8]
b) Write the Transformation Rules for Relational Expressions. [8]

OR

- Q8)** a) Compare B Tree and B+ Tree. Write short note on B Tree as an indexing technique. [8]
b) Write a detailed note on various steps in Query processing. [8]

- Q9)** a) Explain ACID Properties of transaction in detail. [4]
b) What are checkpoints? Explain Deferred and Immediate Checkpoints. [8]
c) Explain time stamp based Concurrency Control. [4]

OR

Q10)a) Write short note on the two phase locking protocol and rigorous two phase locking protocol. **[8]**

b) Explain Shadow Paging with diagram. **[8]**

Q11)a) Write short note on Association Rule Mining. **[4]**

b) Explain need of distributed database system with advantages and disadvantages of distributed database system. Also explain distributed database system. **[8]**

c) Draw and explain components of Data warehouse. **[6]**

OR

Q12)a) Explain 2-Tier and 3-Tier Architecture of databases. **[6]**

b) Write short note on any three. **[12]**

i) Data Mining Process.

ii) Pointer Swizzling techniques.

iii) Centralized and client server database architecture.

iv) Persistent Programming Languages.

