Total No. of Questions : 12]

SEAT No. :

P1414

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T.E. (Computer)

DATABASE MANAGEMENT SYSTEMS

(2008 Pattern) (Semester - I)

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 how problem statement is converted to ER diagram and ER diagram converted into Tables. **[4]**

b) Draw overall structure of Database management system and explain it. **[10]**

c) Explain advantages of DBMS over normal file system. **[4]**

OR

Q2) a) What is Extended ER diagram? Explain with Example. **[4]**

b) Explain different data models Hierarchical, Network and Object Relational Model. **[6]**

c) Explain the concept of primary key, candidate key, super key and Foreign Key with suitable examples. **[8]**

Q3) a) Explain any four Basic Operations in Relational Algebra with suitable example. **[8]**

b) Write note on Database Modification using SQL Insert, Update and Delete Queries. **[8]**

OR

P.T.O.

Q4) a) Explain with example Creating, Dropping and Updating Views. **[6]**

b) Write a short note on dynamic and embedded SQL. **[8]**

c) Explain Aggregate Functions. **[2]**

Q5) a) Write short note on canonical cover. **[4]**

b) Explain Partial dependency and Transitive Dependency. **[8]**

c) Explain Fist Normal Form (1NF) with example. **[4]**

OR

Q6) a) What are different anomalies, that lead us to redesign of database (Normalization)? **[4]**

b) What are desirable features of Decomposition? **[6]**

c) Explain how to convert un-normalized table in database to 2NF. **[6]**

SECTION - II

Q7) a) Compare B Tree and B+ Tree. Write short note on B Tree as an indexing technique. **[8]**

b) Write the Transformation Rules for Relational Expressions. **[8]**

OR

Q8) a) Explain static Hashing and Dynamic Hashing with suitable examples. **[8]**

b) Write note on Query Optimization. **[8]**

Q9) a) Write short note on : **[12]**

i) The two phase locking protocol and rigorous two phase locking protocol.

ii) Multi-Version Concurrency Control.

b) Explain Properties of transaction in detail. **[4]**

OR

Q10) a) Explain Shadow Paging with diagram. **[6]**

b) What are checkpoints? Explain Deferred and Immediate Checkpoints. **[8]**

c) Explain Cascaded Aborts. **[2]**

Q11) a) Explain 2-Tier and 3-Tier Architecture of databases. **[6]**

b) What is distributed database system? Specify advantages and disadvantages of distributed database system. **[6]**

c) Write short note on : **[6]**

i) Need of OODBMS.

ii) Association Rule Mining.

OR

Q12) a) Write short note on : **[6]**

i) Centralized and client server database architecture

ii) Pointer Swizzling techniques.

b) Draw and explain components of Data warehouse. **[8]**

c) Explain.data mining process. **[4]**