Code :9A05401 **1**

II B.Tech II Semester(R09) Regular Examinations, April/May 2011
DATABASE MANAGEMENT SYSTEMS
(Common to Computer Science & Systems Engineering, Information Technology, Computer Science & Engineering)

Time: 3 hours **Max Marks: 70**

Answer any FIVE questions
All questions carry equal marks

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1. (a) What are the basic building blocks of data model.
   (b) Explain about the importance of database design.
2. (a) What are the different decisions to be made during the design of an ER diagram.
   (b) What do you mean by entity clustering. Illustrate with an example.
3. (a) For foreign key violations, SQL provides several alternatives to deal with violations. Illustrate them with examples.
   (b) Explain in detail various integrity constraints over selections.
4. Consider the following sectional schema.
   Employee (employee-name,street,city)
   Works (employee-name, company-name, salary)
   Company (company -name, city)
   Managers(employee-name, manager-name)
   Give expressions in SQL for the following queries.
   (a) Find the names of all employees in this database who line in the same city as the company for which they work.
   (b) Find the names of all employees who live in the same city and on the same street as do their managers.
   (c) Find the names of all employees in this database who do not work for first bank corporation.
5. What is the need for normalization. Give the process of normalization.
6. (a) Explain about optimistic concurrency control mechanism.
   (b) Explain about recovery using validation based protocol.
7. (a) Explain how loss of non volatile storage be death with.
   (b) Explain in detail about concurrent transactions.
8. Illustrate with example dynamic hashing.

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Code :9A05401 **2**

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1. (a) What do you mean by a data model. Explain how data models have evolved.
   (b) Explain with examples various levels of data abstraction.
2. (a) Explain in detail various choices in developing an ER diagram.
   (b) What do you mean by aggregation. ? Explain with an example how aggregation can be indicated in an ER diagram.
3. Consider the following relational scheme.
   Employee (employee-name, street, city)
   Work (employee-name, company-name, salary)
   Company (Company-name, city)
   Managers (employee-name, manager -name)
   Give expressions in SQL for the following queries.
   (a) Give all manager in this database, a 10-percent salary raise.
   (b) Find all companies located in every city in which small bank corporation in located.
   (c) Find the names of all employees who live in the same city as the company for which they work.
4. Explain with examples how key constraints, foreign key, constraints and general constraints can be enforced in SQL.
5. (a) Explain in detail about denormalization.
   (b) What do you mean by surrogate key.
6. (a) What do you mean by a transaction ? How can you ensure atomicity and durability?
   (b) Explain about conservative time stamp ordering mechanism.
7. (a) Explain about log based recovery system.
   (b) Explain in detail about remote backup system.
8. Explain in detail various RAID levels.

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Code :9A05401 **3**

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1. (a) Distinguish between file processing system and database management systems.
   (b) What do you mean by data obstraction. Explain in detail data at various levels of abstraction.
2. What will generally be the data requirements of banking enterprise. From the data requirements identify entity sets and their attributes, and relationship sets and finally draw an ER diagram.
3. Consider the following schema.
   Sailors (sid:integer,sname:string,rating:integer,age:red)
   Boats (bid:integer, bname: string , color :string)
   Reserver (sid: integer bid intiger day date)
   Write the following queries in SQL.
   (a) Find the name of sailors who have received at least two boats.
   (b) Find the sids of sailors with age over 20 who have not reserved a red boat
   (c) Find the names of sailors who have reserved all boats.
   (d) Find the names of sailors who have reserved all boats called Interlave
4. (a) List two reasons why are many choose to define a view.
   (b) List to major problem with processing update operations experienced in terms of viewa.
5. Explain in detail various normal forms.
6. Explain in detail various concurrency control mechanism using time streaming.
7. (a) Discuss in detail about buffer management.
   (b) Discuss about remote back up systems.
8. (a) Explain about bitmap indices
   (b) Explain about static hashing.

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Code :9A05401 4

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1. (a) What are the major disadvantages of file - processing systems.
   (b) What do you mean by a data model? Explain in detail various data models.
2. Construct an ER diagram for a car insurance company. That has a set of customers, each of whom owns one of more cars. Each car has associated with it zero to any number of recorded accidents.
3. (a) Illustrate with examples SQL constructs for creating and modifying relations.
   (b) What do you mean by a foreign key constraint. Illustrate with example how key constraints and foreign key constraints can be specified in SQL.
4. (a) What do you mean by a view? Explain how views enable data independence and ensure security.
   (b) List two major problems with processing update operations expressed in terms of views.
5. (a) How can we improve the database design using normalization.
   (b) Explain about denormalization.
6. (a) Explain about basic timestamp order concurrency control mechanism.
   (b) What do you mean by serializalility? How can you test for serializalility.
7. (a) Explain how log based recovery works.
   (b) Discuss about buffer management.
8. Illustrate with examples insection and deletion operations of B+ trees.

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