

Code No: 07A50801

**R07****Set No. 2****III B.Tech I Semester Examinations, November 2010****DATA BASE MANAGEMENT SYSTEMS****Common to Chemical Engineering, Mechatronics****Time: 3 hours****Max Marks: 80****Answer any FIVE Questions****All Questions carry equal marks**

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1. Explain read only, write only and read before write protocols in serializability. [16]
2. Describe the following:
  - (a) Renaming
  - (b) Join
  - (c) Division
  - (d) Trunc

[4+4+4+4]
3. Describe the following
  - (a) Data dictionary/directory
  - (b) Data security and integrity
  - (c) Concurrent data access for multiple users
  - (d) Data Query, manipulation and reporting

[4+4+4+4]
4. (a) Explain about the index with an example?  
 (b) Explain the various kinds of indexes & how each kind must be evaluated?  

[6+10]
5. (a) Consider a student table containing student number, student name, students major department, students advisor number, students advisor name, students advisor office number, students advisor phone number and students number of credits. List the functional dependencies that exists along with the assumptions that would support there dependencies.  
 (b) Why join dependencies are import in database design? How can you identify join dependencies that must hold in a database.  

[10+6]
6. Design a ER diagram for online purchase of an item and establish all the relations which are necessary.  

[16]
7. (a) Explain in detail about recovery and atomicity?  
 (b) Explain the role of operating systems in buffer management?  

[8+8]
8. Consider the following schema.

Suppliers (sid: integer, Sname: string, address: string)

Parts (pid: integer, pname: string, color: string)

Catalog (sid: integer, pid: integer, cost: real)

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- (a) Find the sides the suppliers who charge more for some part than the average cost of the part (averaged overall the suppliers who supply that part)
- (b) For each part, find Sname of the supplier who charges the most for that part?
- (c) For every supplier that only supplies green parts, print the name of the supplier and the total number of parts that she supplies.
- (d) For every supplier that supplies a green part and a red part print the name and price of the most expensive part that she supplies. [4+4+4+4]

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FIRSTRANKER

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**R07****Set No. 4****III B.Tech I Semester Examinations, November 2010****DATA BASE MANAGEMENT SYSTEMS****Common to Chemical Engineering, Mechatronics****Time: 3 hours****Max Marks: 80**

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1. Describe:

- (a) Specialization
- (b) Entity
- (c) Attribute inheritance
- (d) Entity sets.

[4+4+4+4]

2. (a) Explain forms of basic SQL query?

- (b) Explain complex integrity constraints in SQL?

[8+8]

3. (a) Relational algebra and relational calculus are said to be equivalent in expressive power? Explain.

- (b) Describe the different relational operations that deal with null values.

[8+8]

4. Explain  $B^+$  tree insertion algorithm and how it eliminates overflow page ? [16]

5. Describe the following:

- (a) Check points
- (b) Recovery and atomicity
- (c) Data access
- (d) Transaction log

[16]

6. (a) Explain two types of properties of decomposition &amp; explain them with example

- (b) Explain Multivalued and Join dependencies with examples

[8+8]

7. (a) Explain object oriented data model.

- (b) Explain the advantages and disadvantages of network model.

[8+8]

8. (a) What do you mean by concurrent executions of a transaction ? Explain

- (b) Explain serializable schedule under the two phase protocol.

[8+8]

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**R07****Set No. 1****III B.Tech I Semester Examinations, November 2010****DATA BASE MANAGEMENT SYSTEMS****Common to Chemical Engineering, Mechatronics****Time: 3 hours****Max Marks: 80****Answer any FIVE Questions****All Questions carry equal marks**

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1. (a) Why do SQL allows null values? What is the necessity of null values? Explain where are these null values used?  
(b) Describe the various data types that are used in SQL. [8+8]
2. (a) What is meant by database buffering? Explain.  
(b) What is the role of check points in a log based recovery? [8+8]
3. (a) Explain sorted file organization with an example  
(b) Explain hashed file organization? Give Example? [8+8]
4. (a) What is a 2phase commit protocol? How is it performed?  
(b) Explain multiple granularity locking protocol. [8+8]
5. (a) Describe the alternative ER notations?  
(b) Define aggregation? Explain a university database with aggregation? [8+8]
6. (a) Explain the minimal cover for a set of FD's? Why some functional dependencies are called trivial?  
(b) Verify augmentation and decomposition rules for multi valued dependencies. [10+6]
7. What is relational algebra? List and explain the various operations of relational algebra. [16]
8. (a) Explain the difference between the conceptual and external levels in the [ANSI/SPARC] three level architecture.  
(b) Differentiate between function oriented system development and data oriented system development. Why is data oriented system development more likely to allow a broader range of functions. [6+10]

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**R07****Set No. 3****III B.Tech I Semester Examinations, November 2010****DATA BASE MANAGEMENT SYSTEMS****Common to Chemical Engineering, Mechatronics****Time: 3 hours****Max Marks: 80**

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1. Explain about outer joins and inner joins. [16]
2. (a) Explain about transaction failures?  
 (b) Explain about transaction characteristics in SQL? [8+8]
3. (a) Why do we need a DBMS? How can the size of the DBMS be a disadvantage  
 (b) How can the complexity of a DBMS be a disadvantage?  
 (c) Explain the functions of DBA? [8+4+4]
4. (a) Explain redundancy observed in BCNF and alternatives of decomposing to BCNF.  
 (b) Define third normal form? What types of problems are encountered in tables that are not in their normal form? [10+6]
5. What is key compression? Explain bulk loading in a  $B^+$  tree. Explain effects of inserts & deletes? [16]
6. Describe about the following:  
 (a) Check points  
 (b) Restart recovery  
 (c) Fuzzy check pointing  
 (d) Transaction Roll back [16]
7. (a) Define the terms:  
     i. relation schema  
     ii. relation instance  
     iii. relational database  
     iv. grouping data  
 (b) What is difference between primary key and a candidate key for a given relation? [8+8]
8. (a) Define the following kinds of constraints and give an example of each key constraint, participation constraint.  
 (b) Take a student database as a case study and give detailing. [8+8]

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