Code: 9A05401

II B. Tech II Semester (R09) Regular & Supplementary Examinations, April/May 2012
DATABASE MANAGEMENT SYSTEMS
(Common to CSS, IT & CSE)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
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1 (a)   What are the problems of file system? Explain.
   (b)   Explain the object-oriented model with example.

2 (a)   Explain 1:1 recursive relationship with example.
   (b)   What are the characteristics of a primary key? Explain.

3   Discuss about the following with examples:
          (a) Any four relational set operators.
          (b) Data redundancy.

4 (a)   What is the purpose of a trigger? Explain with example.
   (b)   Explain about arithmetic and logical operators in SQL.

5 (a)   Explain the need for normalization.
   (b)   Explain about functional dependency.

6 (a)   Explain how the concurrency can be controlled using optimistic method.
   (b)   How to ensure serializibility in concurrency control using 2 phase locking and lock types?

7 (a)   What is log based recovery, explain?
   (b)   Explain clearly about restart recovery and recovery algorithm.

8 (a)   What is B-Tree?
   (b)   What are the advantages, disadvantages and applications of B-Tree?

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1   (a)   What are the functions of DBMS? Explain.
      (b)   Explain the development of data models.

2   (a)   What are the differences between composite and simple attributes? Explain with examples.
      (b)   Distinguish between primary key and foreign key with example.

3   (a)   Explain how all joins are performed on a table with examples.
      (b)   Define key. What are the various keys that are used in relational database? Explain them with the context of library system.

4   (a)   What is data definition language? What are the commands that are performed in this language?
      (b)   Explain about WHERE and ANY and ALL sub queries with example.

5   (a)   What is partial dependency? With which Normal form is it associated.
      (b)   What is 3NF? How it is achieved and what are its advantages over 2NF?

6   (a)   Explain about inconsistent retrieval and uncommitted data in concurrency control?
      (b)   Explain about transaction recovery in database recovery management?

7   (a)   Explain about buffer management in details.
      (b)   What is fuzzy check pointing and transaction roll back, explain?

8   Explain the following terms:
      (a) Hard disk controller.
      (b) Tertiary storage.
      (c) Accessibility.
      (d) Addressability.

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1 (a) What is business rule and what is its purpose in data modeling?
   (b) How end user interaction with database is managed in DBMS?

2 (a) What are the challenges in data base design? Explain.
   (b) Define the terms entity super types and sub types with examples.

3 (a) Explain the entity integrity and referential integrity are important in DS.
   (b) Consider two tables customer, agent and perform all the relational set operations on those tables.

4 (a) How to restore the table contents and how to delete the table rows? Explain each with example and syntax.
   (b) What is an attribute list sub query and correlated sub query? Explain

5 (a) Show that if a relation schema is in BCNF, then it is in 3NF, but if a relation schema is in 3NF then it is not necessary in BCNF. Explain with an example.
   (b) What are the anomalies in BCNF?

6 (a) How the concurrency can be controlled using optimistic method? Explain.
   (b) Explain about database recovery management.

7 Explain about the following:
   (a) Immediate database recovery.
   (b) Deferred database recovery.
   (c) Check point.

8 Describe the structure of B-Tree and B+ Trees.

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1 (a) What is data anomaly? Discuss about various types of anomalies.
   (b) Describe the basic features of the relational data model.

2 (a) Explain the terms connectivity and cardinality with examples.
   (b) What is weak entity? How to identify a weak entity in an ERD?

3   What are the rules that are used to define a relational data base system?

4 (a) What is an index? What are the operations that are performed on an index?
   (b) Write about the conversion functions in advanced SQL.

5   Explain 1 NF and 2 NF with suitable example.

6 (a) Explain about transaction properties in transaction management.
   (b) Briefly explain about lost updates and inconsistent retrieval in concurrency control.

7 (a) Explain the concepts of ARIES and its features?
   (b) What is log based recovery, explain?

8   List the advantages and disadvantages of B-Trees.

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