Roll No. ☐☐☐☐☐☐☐☐☐☐

B.E. / B.Tech. (FULL TIME) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2014

COMPUTER SCIENCE AND ENGINEERING
SEVENTH SEMESTER
CS9038: DATABASE TUNING
R-2008

Time: 3 Hours   Max. Marks: 100

ANSWER ALL QUESTIONS

PART A – (10 X 2 = 20 Marks)

1. What is serializability?

2. Define atomicity property of a transaction.

3. What is a hash function? Give example.

4. Differentiate between sparse and dense indexes.

5. Give an example for uncorrelated subqueries with aggregates.

6. What is a trigger?

7. What can a query plan explainer show you?

8. State the problems that may appear when transactions are not well designed or when the lock subsystem is not well parameterized.

9. When a chopping of a transaction T is said to be rollback safe?

10. What is a distributed database management system?

PART B – (5 X 16 = 80 Marks)

11. i. What are the functions performed by the recovery subsystem?   (4)

    ii. List and discuss the ways the recovery subsystem can be tuned.   (12)

12. a. Explain the following types of queries with an example for each: point query; multipoint query; range query; grouping query and join query.   (16)

(OR)

    b. i. What is a composite index? Explain clustering and no clustering composite index with an example for each.   (6)

    ii. List and discuss the benefits composite indexes offer compared with single-attribute indexes.

(6)

    iii. State the main disadvantages of composite indexes.   (4)

13. a. i. Explain with an example denormalization as a technique for tuning relational systems. (8)

ii. What is a materialized view? Explain with an example aggregate maintenance with materialized views. (8)

(OR)

b. What is query tuning? Give examples of query tuning and discuss the same. (16)

14. a. i. Explain with diagrammatic illustration a producer-consumer hierarchy of DBMS resources. (8)

ii. What are performance monitors? Discuss. (8)

(OR)

b. How to check DBMS resource consumption from an operating system point of view? Discuss. (16)

15. a. i. Explain with an example the correctness of a transaction chopping with the aid of an undirected graph. (8)

ii. What is snapshot isolation? Does snapshot isolation guarantee serializability? Discuss with an example. (8)

(OR)

b. Do database management systems execute SQL queries in the order they are written? Discuss with examples. (16)

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