

ROLL No. :

--	--	--	--	--	--	--	--	--	--

ANNA UNIVERSITY :: CHENNAI

B.E. / B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV / DEC 2011

COMPUTER SCIENCE & ENGINEERING BRANCH

SEVENTH SEMESTER – (REGULATIONS 2008)

CS9038 – DATABASE TUNING

Time : 3 Hrs.

Max. Marks : 100

Answer ALL Questions

PART – A (10 X 2 = 20 Marks)

1. Define database tuning.
2. What are techniques used for circumventing hot spots?
3. What are advantages of having a composite index for a table?
4. Which types of queries are benefited by the B-trees? How?
5. Give the similarities and dissimilarities between the table clustering and index clustering.
6. 'Triggers can lead to a maintenance nightmare.' – Justify.
7. What is the role of event monitors? Give example.
8. Define Suspicious Queries.
9. List any four configuration parameters and give their minimum requirement.
10. Prove that the chopping consisting of $\{private(T_1), private(T_2), \dots, private(T_n)\}$ is rollback safe and has no SC-cycles.

PART – B (5 X 16 = 80 Marks)

11. i) Criticize the roles of clustered indexes and non-clustered indexes in processing the different types of queries. [10]
ii) Consider the relations Employee (ssnum, name, dept, manager, salary) and Student (ssnum, name, course, grade, stipend, written-evaluation). Suppose that the student stipends correspond to monthly salaries, whereas the employee salaries are yearly. Give two different SQL statements to find out which employees are paid as much as which student. Discuss which is better and justify. [6]
12. a.i) Explain the methods that are used to tune the Recovery subsystem. [10]
a.ii) Explain how and when the Isolation guarantees can be weakened. [6]

50

Or

12.b.i) Illustrate with example the priority inversion in transaction execution. [6]

b.ii) Explain the principles and tuning methods of the recovery subsystem. [10]

13.a. i) Explain Tuning Normalization with suitable scenarios. [6]

a.ii) Explain with examples the tuning of queries. [10]

Or

13.b. i) Explain with examples, how the rewriting of Nested Queries help in database tuning. [6]

b. ii) Poorly written applications can result in poor performance. So express how the Application Interface can be tuned so as to improve the performance. [10]

14.a. i) Draw the producer-consumer chain of DBMS resources and explain how the cause-effect patterns in the chain help in troubleshooting. [10]

a.ii) Explain any two tools that are used for performance monitoring. [6]

Or

14.b. i) Explain how do you check that the DBMS subsystem is working satisfactorily. [10]

b.ii) Which indicators are to be measured for the following: [6]

1. Finding suspicious queries
2. Analyzing a query's access plan
3. Profiling a query execution

15.a. i) With an algorithm explain how an optimal chopping can be done for a transaction T_i . [8]

a.ii) Take any 2 relations of your choice to give a query access plan for your query that needs to get data from both the relations based on some join condition. Use as many query structure operators as possible to give the query access plan of the query. Also mention the necessary assumptions taken to draw the same. [8]

Or

15.b. i) Illustrate with a neat example, the process of finding the finest chopping. [8]

b.ii) Give short note on the following: [5 + 3]

1. FAME
2. SAS