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**Question Paper Code : 64026**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2010

Fourth Semester

Computer Science and Engineering

CS 2255 — DATABASE MANAGEMENT SYSTEMS

(Common to Information Technology)

(Regulation 2008)

Time : Three hours

Maximum : 100 Marks

Answer ALL questions

PART A — (10 × 2 = 20 Marks)

1. Define the two levels of data independence.
2. Write down any two major responsibilities of a database administrator.
3. List out the various relational algebra operators.
4. What are the four broad categories of constraints?
5. Define irreducible sets of dependencies.
6. Define the third normal form.
7. What are ACID properties?
8. What are the three kinds of intent locks?
9. Which are the factors to be considered for the evaluation of indexing and hashing techniques?
10. What is the drawback of flash memory?

PART B — (5 × 16 = 80 Marks)

11. (a) Explain the three different groups of data models with examples. (16)

Or

- (b) Describe the components of entity-relationship diagram with suitable examples. (16)

12. (a) Describe the features of Embedded SQL and Dynamic SQL. Give suitable examples. (16)

Or

- (b) Write short notes on the following :

- (i) Mandatory access control. (9)  
(ii) Missing information. (7)

13. (a) Explain non loss decomposition and functional dependencies with suitable example. (16)

Or

- (b) Discuss Join Dependencies and Fifth Normal Form, and explain why 5NF? (16)

14. (a) (i) State the Two-Phase Commit protocol. Discuss the implications of a failure of the coordinator and some participants. (10)

- (ii) Briefly explain transaction recovery with primitive operations. (6)

Or

- (b) (i) State and explain the three concurrency problems. (9)

- (ii) What is meant by isolation level and define the five different isolation levels. (7)

15. (a) (i) Discuss the improvement of reliability and performance of RAID (8)

- (ii) Explain the structure of a B<sup>+</sup>-tree. (8)

Or

- (b) Explain the complex selection predicates with example. (16)