

**C 3149**

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2007.

Fifth Semester

(Regulation 2004)

Computer Science and Engineering

CS 1301 — DATABASE MANAGEMENT SYSTEMS

(Common to Information Technology)

(Common to B.E. (Part-Time) Fourth Semester Regulation 2005)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List five responsibilities of the DB Manager.
2. Give the limitations of E-R model? How do you overcome this?
3. Define query language. Give the classification of query language.
4. Why it is necessary to decompose a relation?
5. Give any two advantages of sparse index over dense index.
6. Name the different types of joins supported in SQL.
7. What are the types of transparencies that a distributed database must support? Why?
8. What benefit is provided by strict-two-phase locking? What are the disadvantages result?
9. Briefly write the overall process of data warehousing.
10. What is an active database?

PART B — (5 × 16 = 80 marks)

11. (a) (i) What are the types of knowledge discovered during data mining? Explain with suitable example. (8)
- (ii) Highlight the features of object oriented database. (8)

Or

- (b) (i) What is nested relations? Give example. (8)
- (ii) Explain the structure of XML with suitable example. (8)
12. (a) (i) Compare file system with database system. (8)
- (ii) Explain the architecture of DBMS. (8)

Or

- (b) (i) What are the steps involved in designing a database application? Explain with an application. (10)
- (ii) List the possible types of relations that may exist between two entities. How would you realise that into tables for a binary relation? (6)
13. (a) (i) What are the relational algebra operations supported in SQL? Write the SQL statement for each operation. (8)
- (ii) Justify the need for normalization with examples. (8)

Or

- (b) (i) What is normalization? Explain 1NF, 2NF, 3NF and BCNF with simple example. (8)
- (ii) What is FD? Explain the role of FD in the process of normalization. (8)
14. (a) (i) Explain the security features provided in commercial query languages. (8)
- (ii) What are the steps involved in query processing? How would you estimate the cost of the query? (8)

Or

- (b) (i) Explain the different properties of indexes in detail. (8)
- (ii) Explain various hashing techniques. (8)
15. (a) (i) Explain the four important properties of transaction that a DBMS must ensure to maintain database. (8)
- (ii) What is RAID? List the different levels in RAID technology and explain its features. (8)

Or

- (b) (i) What is concurrency control? How is it implemented in DBMS? Explain. (8)
- (ii) Explain various recovery techniques during transaction in detail. (8)
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