Reg. No. : | | | | | | | | | | | |

Q 2324

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2007.

Sixth Semester

Mechatronics Engineering

IF 254 — DATA BASE MANAGEMENT SYSTEM

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define data abstraction.

2. Define data independence.

3. Explain third normal form.

4. Explain the use of natural join operation in relational algebra.

5. Explain the need for concurrency control in DBMS.

6. What are the factors used to analyze the behaviors of indexing techniques?

7. Distinguish between hierarchical model and network model.

8. What are the different types of models used to represent architecture of parallel database system?

9. Define data mining and data warehousing.

10. Explain the concept of objects used in design of databases.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Distinguish between file system and database management system. (8)

(ii) Explain with a block diagram the organization of a DBMS. (8)

Or

(b) Explain with an example the organization of different types of data models. (16)

12. (a) (i) Explain the concept of views in relational data models. (7)

(ii) Write short notes on :

- Projection. (3)
- Outer Join. (3)
- Aggregate functions. (3)

Or

(b) (i) Let R = (A, B, C) and let r_1 and r_2 be relations on schema R. Give an expression in SQL that is equivalent to each of the following queries : (8)

- $r_1 \cup r_2$
- $r_1 \cap r_2$
- $r_1 - r_2$
- $\prod_{AB}(r_1) \bowtie \prod_{AB}(r_2)$

(ii) Show that in SQL **all** is identical to **not in.** (8)

13. (a) (i) Explain in detail on distributed query processing. (8)

(ii) Explain the concept behind log based recovery system (8)

Or

(b) (i) What is the need to go in for dynamic hashing technique. (8)

(ii) Compare ordered indexing and hashing techniques. (8)

14. (a) Write short notes on :

(i) Data structure representation in network model. (8)

(ii) DBTG CODASYL model. (8)

Or

(b) Explain in detail on the design of temporal databases and parallel databases. (16)

15. (a) Explain in detail on the design of object oriented databases. (16)

Or

(b) Write short notes on

(i) Knowledge representation using rules in data mining. (8)

(ii) XML query processing. (8)
