Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐

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

Fourth Semester

Information Technology

IF 254 — DATABASE MANAGEMENT SYSTEM

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   What are the major disadvantages of File Processing System?

2.   What do you mean by weak entity set? Explain its purpose with an example.

3.   Write a short note on Aggregate functions in SQL. Give Examples.

4.   Can a view be defined from another view? Explain.

5.   Differentiate Loss–less join decomposition and Lossy Join decomposition.

6.   How do you estimate the cost of the Hash Join? How is it different from Hybrid Hash Join?

7.   Give the different forms of query possible with Multimedia Database Systems.

8.   Compare and Contrast Range Partitioning and Hash Partitioning.

9.   Give examples of different query languages of Object Relational Databases.

10. Mention few applications of Data Mining.

PART B — (5 × 16 = 80 marks)

11. (a) (i)   Explain the Overall system structure of database system.   (6)

         (ii) Write a note on the different Data Models of a database, discussing their merits and limitations.   (10)

Or

     (b) Write a note on the extended features of the E-R Diagram, giving an example for each.

12. (a) (i) Describe the syntax of any four operations in relational algebra, with examples. (10)

  (ii) Differentiate between Domain Relational Calculus (DRC) and Tuple Relational Calculus. (6)

Or

(b) Define Normalization. Explain the different levels of Normal forms for the relation given below.

Project_employee table

(Proj.Num, Proj.Name, Empid, Empname, Designation, Hourly charges, total no. of hours worked, Total Charges).

Populate the table with appropriate Values.

13. (a) Write a note on the following :

  (i) Two-phase locking protocol (2PL). (8)

  (ii) Lock based protocol. (8)

Or

(b) (i) Explain the architecture of Distributed Database Management System. (5)

  (ii) What is meant by fragmentation? What are its different types? Explain with examples. (11)

14. (a) (i) Write short notes on Deductive Databases. (8)

  (ii) Compare Triggers and Stored Procedures. (8)

Or

(b) Write short notes on :

  (i) Temporal database

  (ii) Multimedia database. (8 + 8)

15. (a) (i) What is the difference between persistent and transient objects? How is persistence handled in typical object-oriented systems? (5)

  (ii) Discuss the concept of Abstraction. (6)

  (iii) Compare and Contrast Object Oriented (OO) Data Model and Object Relational (OR) Data Model. (5)

Or

(b) (i) Describe the syntactical structure of Data Mining Query Language (DMQL), giving examples. (7)

  (ii) Explain the various schema levels of a Data Warehouse. (9)