

1048
B.E. (Computer Science and Engineering)
Eighth Semester
CSE-811: Advanced Database System (Reappear)

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Part.

x-x-x

1Q.

- i) Briefly explain the difference between DDL, DCL and DML. (01 Mark)
- ii) What is Data Mining process? (01 Mark)
- iii) What is Query Decomposition? (01 Mark)
- iv) Define Foreign Key. (01 Mark)
- v) Define multivalued dependency. (01 Mark)
- vi) What is Object Relational System? (01 Mark)
- vii) Briefly explain the difference between OLAP and OLTP. (01 Mark)
- viii) Why BCNF is considered a stronger form of 3NF? (01 Mark)
- ix) Define Shadow Paging. (01 Mark)
- x) What is Deferred Update? (01 Mark)

PART-A

2Q. Consider the following employee database:-

employee(employee_name, street, city)
works(employee_name, company_name, salary)
company(company_name, city)
manages(employee_name, manager_name)

Write following SQL queries for the above given database:

- 1) Find all the employees in the database who live in same cities and in same streets as do their managers.
- 2) Find all employees in the database who earn more than every employee of Small Bank Corporation.
- 3) Find all employees who earn more than average salary of all employees of their company
- 4) Assume that the companies may be located in several cities. Find all companies located in every city in which Small Bank Corporation is located.
- 5) Give all managers of First Bank Corporation a 10% raise unless the salary becomes greater than \$100,000; in such cases, give only a 3% raise.

(5x 2 = 10 Marks)

3Q. a) Explain different Concurrency control techniques in DBMS. (7 Marks)

3Q. b) Briefly Discuss the steps involved in Query Processing with diagram. (3 Marks)

4Q. a) Explain differences in Object Oriented and Object Relational Databases in detail. (5 marks)

4Q. b) Suppose that we decompose the schema $R=(A, B, C, D, E)$ into (A, B, C) & (A, D, E) Show that this decomposition is lossless-join decomposition if the following set F of functional dependencies holds: (5 Marks)

$A \rightarrow BC$ $CD \rightarrow E$ $B \rightarrow D$ $E \rightarrow A$.

PART-B

5Q. What Considerations play a major role in the design of a data warehouse?
Discuss the open issues in data warehousing. (5+5=10 marks)

6Q. a) Explain Replication and Allocation techniques for Distributed Database design in detail. (5 Marks)

6Q. b) How a distributed database designed for a local area network differ from one designed for a wide area network? (5 Marks)

7Q. Write short notes on following:

a) Introduction to DB2 Universal Database. (5 Marks)

b) Main Features of MySQL (5 Marks)