

Exam.Code:0916  
Sub. Code: 6208

1058

B.E. (Computer Science and Engineering)  
Fourth Semester  
CSE-412: Database Management System

Max. Marks: 50

Time allowed: 3 Hours

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

x-x-x

I. Attempt the following:-

- What is dirty read? Give example.
- What is relational completeness? Explain.
- What is wait die and wound wait conditions? Explain with example.
- What is domain key normal form? Give example.
- What is correlated query? Give example. (5x2)

UNIT – I

- II. a) What are the various steps to Conceptual database design? Give ER model for Online Airline Reservation system including all basic and extended ER concepts.
- b) Give conversion rules from ER model to Relational model. (2x5)

III. Write expression in relational algebra or SQL for following:

Employee {person-name, street, city}

Works (person-name, company-name, salary)

Company (company-name, city)

Manages (person-name, manager-name)

- Find the name of all employees who don't work for First Bank Corporation.
- Find 5 highest paid of First Bank Corporation.
- Find all employees who live in same cities as the company they work for.
- Display name of employee, address of employee and their manager name for First Bank Corporation.
- Find 5 lowest paid employee names. (10)

IV. a) Explain B tree based indexing with example. Give its various applications.

b) Compare and contrast various data models.

c) Explain hash based indexing with example

(4,4,2)  
P.T.O.



(2)

UNIT – II

- V. a) What are the various Threats to database systems? Explain various Security Methods for data protection.
- b) Name various Concurrency problems in database. Explain in detail various Lock based Concurrency control techniques. (5,5)
- VI. a) What is Correlated sub query? Illustrate with example.
- b) Explain implicit and explicit cursor with suitable example.
- c) Explain various types of triggers with one example. (2,4,4)
- VII. a) With an example justify the statement "Multi valued dependencies are consequences of First Normal Form". Also discuss how the multivalued dependencies are eliminated with example?
- b) Discuss the similarities and dissimilarities between BCNF and 3<sup>rd</sup> Normal form. Also explain why BCNF is stronger than 3<sup>rd</sup> normal form. (5,5)

x-x-x