

[4366]- 302
SYMCA (Engg. Faculty)
DATABASES : CONCEPTS AND SYSTEMS
(Semester - III) (2008 Pattern) (610902)
MAY 2013 EXAMINATIONS

Time: 3 Hours]

[Max. Marks : 70]

Instructions to the candidates:

- 1) Answers to the two sections should be written in separate books.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Assume Suitable data if necessary.

SECTION I

Q1) a) Describe Relational Data model, Hierarchical Data model and Network Data model. [6]

b) Write advantages and disadvantages of DBMS approach. [5]

OR

Q2) a) Describe Query Processor and Storage Manager Components of DBMS. [6]

b) What is DDL and DML? Give one example of each. [5]

Q3) a) Construct an ER diagram for a car insurance company whose customers own one or more cars each. Each has associated with it zero to any number of recorded accidents. [4]

b) Explain with an example how ER diagram is converted into table. [8]

OR

Q4) a) Give the significance of following design constraints. [8]

- i) User – Defined
- ii) Condition – Defined
- iii) Disjoint
- iv) Overlapping

b) Define Weak Entity set, strong entity set, attribute, stored and derived attributes, and composite attributes? [4]

Q5) a) What is a view? Explain insert, update and delete operations with respect to views. [6]

b) What is integrity and referential constraints? Explain. [6]

OR

Q6) a) Write a note on index types? What are the advantages and disadvantages of indexes? [7]

b) Explain different types of joins in SQL with suitable example. [5]

SECTION II

- 7) a) Consider the employees database for the following schema [8]
Employee(employee_name, street, city)
Works(employee_name, company_name, salary)
Company(company_name, city)
Manages(employee_name, manager_name)
Give an expression in Sql for each of the following queries.
a) Find the names and cities of residence of all employees who work for First Bank Corporation.
b) Find the names, street addresses, and cities of residence of all employees who work for First Bank corporation and earn more than \$10000.
c) Find all employees in the database who do not work for First Bank Corporation.
d) Find the Company that has the most employees.
- b) Explain Embedded and Dynamic SQL. [4]

OR

- Q8) a) Explain any four aggregate functions in SQL with suitable examples. [4]
b) Write a short note on Triggers and stored procedure. [8]
- Q9) a) What is meant by functional dependencies. Explain 2NF, 3NF with example. [7]
b) Explain Database design methodology. [5]

OR

- Q10) a) Give the relation schemas $R=(A,B,C,D,E)$ and functional dependencies as [7]
 $A \rightarrow C, C \rightarrow D, CE \rightarrow A, B \rightarrow C, DE \rightarrow C$.
Relations R are decomposed into lossy or lossless? Justify.
b) Write short note on multi valued dependency. [5]
- Q11) a) Define Serializability. Explain the types of serializability with example. [6]
b) Explain Deadlock Handling with example. [5]

OR

- Q12) a) Explain Recoverability with example. [6]
b) Explain shadow paging method as a crash recovery method. [5]