JM-256

March-2013

Database Management System

Time : 3 Hours] [**Max. Marks : 70**

1. (A) Answer the following (any **four**) : **08**

    (1) Difference between super key and candidate key.

    (2) When are tables said to be UNION compatible.

    (3) Define functional and full functional dependency.

    (4) Define Index and Data Redundancy.

    (5) Discuss relational operator Project and Difference.

  (B) Answer the following (any **two**) : **06**

    (1) Explain Multi-valued, derived and composite attributes with example.

    (2) Explain integrity rules with example.

    (3) Explain relationships within relational database.

2. (A) Answer the following (any **two**) : **08**

    (1) Describe the Database system environment with a proper diagram.

    (2) Explain difference between Hierarchical data model and Network data model with diagram.

    (3) Explain the Relational data model with relational diagram.

  (B) Draw an ERD based on Crow Foot Model for the following : **06**

    • The Organization has a number of sales offices in several cities.

    • Each sales office is assigned one or more employees. An employee must be assigned to only one sale office.

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- For each sales office, there is always one employee assigned to manage that office. An employee may manage only one sales office to which he is assigned.

- Each sales office can have many customers and customer can make purchase from many sales office.

- Sales office have multiple products to sell.

- Each employee sell multiple products to customers and invoice details has to be maintained.

OR

Explain the steps involved in developing an ER Diagram with its various symbols.

3. (A) Normalize the following table upto 3NF and draw the Dependency diagram. **08**

Order No.	Cust No.	Cust Name	Prod No	Prod Desc	Price	Qty	Cust Address	Date Ordered
1	C1	Anil	2001	Television	10000	1	12,Radhaswami, Gurukul	12-02-2013
1	C1	Anil	2003	DVD Player	3000	2	12,Radhaswami, Gurukul	12-02-2013
2	C1	Anil	2002	Water Purifier	5000	2	12,Radhaswami, Gurukul	13-02-2013
3	C2	Sunil	2001	Television	10000	2	C-6, LaHabitat, Ahmedabad	14-02-2013
4	C1	Anil	2003	DVD Player	3000	2	12, Radhswami, Gurukul	16-02-2013
5	C3	Harish	2001	Television	10000	1	D-7, Hari Homes, Ahmedabad	17-02-2013
6	C2	Sunil	2002	Water Purifier	5000	1	C-6, LaHabitat, Ahmedabad	18-02-2013

OR

(A) Answer the following (any **two**) :   **08**

    (1) Explain BCNF and 4NF with example.

    (2) Explain the steps for 2NF.

    (3) Define Normalization and explain its need. Explain 3NF with example.

(B) Answer the following (any **two**) :   **06**

    (1) What are the advantages and disadvantages of DDBMS.

    (2) Give the difference between Distributed processing and Distributed databases.

    (3) Give difference between Centralized database and Distributed database.

4. Answer the following (any **two**) :   **14**

    (1) Define a Transaction and explain the properties of a Transaction. Discuss three main problems which may occur during the execution of a transaction.

    (2) Define Lock Ganularity and explain in detail types of Locks.

    (3) Define Deadlock and explain the three basic techniques to control deadlock ? Explain two phase Locking Protocol to ensure Serializability.

5. (A) Answer the following (any **four**) :   **08**

    (1) Explain to_date function with example.

    (2) Explain substr() and rpad() function with example.

    (3) State and explain any two DML commands in SQL.

    (4) State and explain any two Datatypes in SQL.

    (5) Explain months_between and add_months function with example.

(B) Solve the following queries (any **three**) :   **06**

Tables : **Cust_master**(CustNo, Custname,City,State,Telno)

Sales_master(CustNo,Prodid,Sales_date,Qty)

Product_master(Prodid,Prodname,Price)

(1) Display Custno and sum of Qty customer wise.

(2) Display Custname, Prodname,Sales_date for each sales.

(3) Display all the Custname whose name starts with 'A' and name length is 4 characters.

(4) Display all the orders placed in the month of January or December.

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