    (iii) Display the name of highest salary paid 'female' employee.

    (iv) Which employee is oldest manger in company?

    (v) Display the name of department of the employee 'SMITH'.   (5)

6.   (a) What is join statement? Illustrate different types of joins in SQL with example of each   (10)

    (b) Explain how groupBy clause works? What is the difference between WHERE and Having?   (5)

[This question paper contains 4 printed pages.]

Your Roll No...............

Sr. No. of Question Paper : 3684   **H**

Unique Paper Code   : 6202451201

Name of the Paper   : Database Management Systems

Name of the Course   : **B.Voc.**
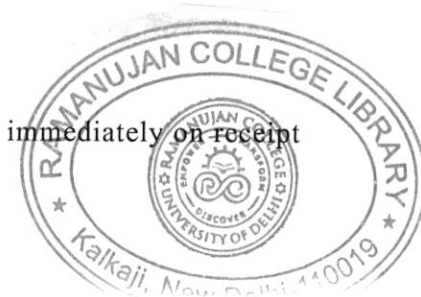
Semester   : II

Duration : 2 Hours   Maximum Marks : 60

Instructions for Candidates

1.   Write your Roll No. on the top immediately on receipt of this question paper.

2.   Attempt total 4 questions.

3.   Q1 is compulsory to attend.

4.   Rest, **Attempt any 3** questions more.

                (15 x 4 = 60)

1.   (a) Define database. Briefly discuss the advantages of using the DBMS.   (4)

(b) Explain different types of keys in DBMS with example. (4)

(c) Explain insertion, deletion, and modification anomalies. (3)

(d) Define domain, attribute, tuple and relation. (4)

2. (a) What is an ER model? Write about different types of attributes in ER model. Show the notation of each. (10)

(b) Design an ER Diagram for keeping track of Information about Bank Database, Taking into account 4 entities: BANK, ACCOUNT, BRANCH, and LOAN. (5)

3. (a) What is a data model? Describe various data models. (10)

(b) Demonstrate the use of DISTINCT keyword in SQL select statement. (5)

4. (a) What are different 3 types of DBMS architectures. Explain 3-tier architecture in details. (10)

(b) List and explain the inference rules of functional dependencies. (5)

5. (a) Write Short notes on the following (any 4): (2.5*4=10)

(1) Generalization and specialization

(2) Different types of keys in DBMS

(3) DDL COMMANDS

(4) DML COMMMANDS

(5) Composite attributes

(6) Loss less-join dependency

(b) Write SQL Queries for following set of tables:

EMPLOYEE (EmpNo, Name, DoB, Address, Gender, Salary, DNumber) DEPARTMENT (DNumber, Dname, ManagerEmpNo, MnagerStartDate).

(i) Display the Age of 'male' employees.

(ii) Display all employees in Department named 'Marketing'.