Q. P. Code: 37783

(3 Hours)   Marks : 80

N.B. : 1. Question **no. 1** is **compulsory**.

     2. Solve any **Three** questions out of remaining **Five** questions.sss

Q 1	a	Explain Role of DBA ?	5
	b	List all the functional dependencies satisfied by the relation.	5

X	Y	Z
X1	Y1	Z1
X1	Y2	Z1
X2	Y2	Z1
X2	Y2	Z1

	c	What is the difference between unique key and primary key?	5
	d	Explain different types of attributes with examples?	5

Q 2	a	Explain static hashing technique with example?	10
	b	Define Normalization? Explain 1NF, 2NF and 3NF with examples?	10

Q 3   a   Consider the following employee database.   10

     Employee(empname, street, city, date_of_joining)
     Works(empname, company_name, salary)
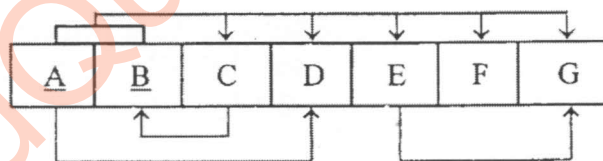   Company(company_name, city)
     Manages(empname, manager_name)
     Write SQL queries for the following statements:
        i) Modify the database so that employee "Sachin " now lives in "Mumbai"
        ii) Find number of employees in each city with date_of_joining as   "01-Aug-2017"
        iii) List the name of companies starting with letter "A"
        iv) Display empname , manager_name , city of those employees whose date_of_joining is greater than "01-01-2014"

    b   Explain DBMS architecture   10

Q 4   a   Construct a dependency diagram of relation R and normalize it up to the BCNF   10
       Normal form

    b   Explain different types of relational algebra operations.   10

Q 5	a	Explain Cursors and its types with example	10
	b	Draw EER diagram for Hospital Management System showing constraints on generalisation and specialisation	10

Q 6   Write a short note on:

	a	Types of Entities	5
	b	Authorization in SQL	5
	c	Views in SQL	5
	d	B- tree	5