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 b	Explain Role of DBA ? List all the functional dependencies satisfied by the relation.				5 5
		X	Υ	Z		
		X1	Y1	Z1		
		X1	Y2	Z1		
		X2	Y2	Z1		
		X2	Y2	Z1		

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

  Employee(empname, street, city, date\_of\_joining)

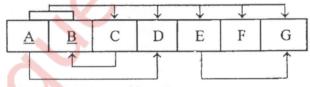
  Works(empname, company\_name, salary)

  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 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 10
  generalisation and specialisation
- generalisation and specialisation

  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