

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 Normal form 10
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- 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