QP Code : 5443

(3 hours)   **Total Marks: 80**

N.B. : (1) Question number one is compulsory
(2) Attempt any three from remaining five questions
(3) Make suitable assumptions if needed

Q 1 (a) Draw E-R diagram for Hospital management System.

Convert E-R diagram into tables.   10

(b) Explain authorization in sql.   5

(c) List four significant differences between file processing system and
database management system   5

Q. 2 (a) What is a deadlock? How is it detected? Discuss different types of

deadlock prevention scheme.   10

(b) Explain following terms with suitable example   10

(I) Weak entity set   (ii) Data manipulation language

(iii) Foreign key   (iv) Super key

Q. 3 (a) When a transaction is rolled back under timestamp ordering, it is assigned

a new timestamp, Why can it not simply keep its old timestamp?   10

(b) What is normalization? Explain 1NF, 2NF, 3NF and BCNF with examples   10

TURN OVER---

Q. 4 (a) For the following given database, write SQL queries:-   10

employee(eid, employee_name, street, city)

works(eid, cid, salary)

company(cid, company_name,city)

Manager(eid, manager_name)

(i)Find the names, street and city of all employees who work for "AZT"

and earn more than Rs. 30,000

(ii) Find the names of all employees having "K" as the first letter in

their names

(iii) Display the annual salary of all employees.

(b) Describe overall architecture of DBMS with diagram   10

Q. 5 (a) Discuss the different security and authorization mechanisms in

database management system.   10

(b) Explain lock based and validation based protocol with example   10

Q..6 (a) Write short notes on any four   20

(i) Specialization and Aggregation

(ii) Referential integrity

(iii) Assignment

(iv) Log based recovery

(v) Cost based query optimization