SEAT No. :

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T.E./Insem. - 539
T.E. (Computer Engg.)
DATABASE MANAGEMENT SYSTEMS APPLICATIONS
(2012 Pattern) (Semester - I)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates :

1) *Answer Q1 Or Q2, Q3 or Q4, Q5 or Q6.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Figures to the right indicate full marks.*
4) *Answer suitable data, if necessary.*

Q1) a) What is index created on table column? How it improves performance of SELECT query? **[5]**

b) What is the impact of insert, update & delete anomaly on overall design of database? How normalization is used to remove these anomalies? **[5]**

OR

Q2) a) Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examinations conducted. **[5]**

b) Consider following schema : **[5]**

account(acct_no, branch_name, balance)

Depositor(cust_name, acct_no)

borrower(cust_name, loan_no)

Write following queries using SQL (any 2)

i) Find all customers who are having an account and loan or both.

ii) Find all customers who have an account but no loan at the bank.

iii) Find average account balance at each branch.

P.T.O.

Q3) a) Consider following structure for MongoDB collection and write a query for following requirements in MongoDB (any 2) **[5]**

Emp (EmpNo, EName, Department, Designation, Salary)

Department(Dno, Dname)

   i) Create above collections and insert minimum 2 documents into collection.

   ii) Display all the employees working in COMP department.

   iii) Update the dname to IT for Dno 101. If such department is not available in collection make new entry.

   b) Explain aggregation in MongoDB with suitable Example. **[5]**

<div align="center">OR</div>

Q4) a) Explain how NOSQL databases are different than relational databases?**[5]**

   b) List NOSQL data Models and explain any one in detail. **[5]**

Q5) a) Define schedule. Explain with example recoverable schedule. **[5]**

   b) What is the requirement of atomicity and durability property of relational databases? Explain with example. **[5]**

<div align="center">OR</div>

Q6) a) Write note on Performance Tuning in NOSQL databases. **[5]**

   b) What is transaction? Explain different states of transaction. **[5]**