

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII • EXAMINATION – WINTER 2013

Subject Code: 171602**Date: 28-11-2013****Subject Name: Distributed Database Application and System****Time: 10:30 TO 01:00****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) Explain various levels of data and process distribution in distributed environment. **07**

(b) Explain Top Down Design Process for Distributed Database Design. **07**

Q.2 (a) Explain following in context of Relational algebra : **07**

1. Selection
2. Θ – Join
3. Intersection

(b) Explain database interoperability. **07**

OR

(b) Explain layers of Query processing. **07**

Q.3 (a) Consider following relations **07**

employee (person-name, street, city)
works(person-name, company-name, salary)
company(company-name, city)
manages(person-name, manager-name)

Write following query in relational algebra form.

(1) Find names of all employees who work for HDFC.

(2) Find the names of all employees who do not live in the same city as the company for which they work.

(3) Find names and cities of residence of all employees who work for HDFC and earn more than Rs 10 lac per year .

(b) Draw and explain the process of DDBS design to be used when we wanted to design DDBS from scratch? **07**

OR

Q.3 (a) Describe BEA algorithm used in vertical fragmentation. **07**

(b) Explain View management. How it is carried out in centralized and distributed DBMS? **07**

Q.4 (a) List the steps of Query Decomposition. Explain any one of them. **07**

(b) What is Query Optimization? List the components of Query Optimizer software and explain any one. **07**

OR

Q.4 (a) What is allocation? List and explain the information requirements during allocation. **07**

(b) Explain with necessary diagram the architecture of Distributed DBMS. **07**

Q.5 (a) Explain Transaction Management in DDBMS. **07**

(b) Discuss fundamental issues in distributed database design. Give at least 3 differences between replicated and Partitioned database. **07**

OR

Q.5 (a) Write short note on: Reliability in Distributed DBMS **07**

(b) Write short note on: MDBS architecture **07**
