

Question Paper



MANIPAL UNIVERSITY

SCHOOL OF INFORMATION SCIENCES

FIRST SEMESTER MASTER OF ENGINEERING - ME (Big Data and Data Analytics)

DEGREE EXAMINATION - NOVEMBER 2017

DATE : Monday, November 20, 2017

TIME : 10:00AM - 1:00PM

Modern Database Management Systems [BDA 607]

Marks: 100

Duration: 180 mins.

A

Answer all the questions.

- 1) List 9 various components of the database environment briefly explain each of them. (10)
- 2) What DDL and DML briefly explain? (10)
- 3) Consider the following schemas, (10)

loan (loan_number, branch_name, amount), borrower (customer_name, loan_number)

Write a query using tuple relational calculus for the following?

- a. Find the *loan_number*, *branch_name*, and *amount* for loans of over \$1200
- b. Find the loan number for each loan of an amount greater than \$1200
- c. Find the names of all customers having a loan, an account, or both at the bank
- d. Find the names of all customers who have a loan and an account at the bank

- 4) Consider a database with the following relations. (10)

loan (loan-number, branch-name, amount)
customer (customer-name, customer-street, customer-city)
depositor (customer-name, account-number)
borrower (customer-name, loan-number)
account (account-number, branch-name, balance)

branch (branch-name, branch-city, assets)

a. Find all accounts with the maximum balance (use with clause) 2 Marks

b. Delete all accounts at every branch located in Needham city 4 Marks

c. Delete all accounts records at the Perryridge branch 2 Marks

d. Add a new tuple(A-792,Perryridge, 1200) to account relation 2 Marks

5) Explain the terms 1. Recoverable Schedules 2. Cascading Rollbacks 3. Cascade less Schedules. (10)

3+3+4 Marks

6) List Drawbacks of Tree/Graph Protocol, Discuss Graph-Based Protocols, Tree protocol in detail. (10)

4+6

Marks

7) Discuss JSON data structure types and how to read them. (10)

8) List the 5 functions taken care by Map-Reduce environment? Name and briefly write about 3 machine failures that could occur in the map-reducing environment? 4+6 Marks (10)

9) Discuss Version stamps - Business and system transactions. (10)

10) Marks Explain Incremental Map-Reduce procedure? (10)

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