SET - C

National Institute of Technology Calicut
Department of Computer Science and Engineering
CS3095D DBMS Lab

Time: 30 minutes **Test II** **Marks: 06**

Answer all Questions

Upload the answer script as pdf file in Eduserver

Submission- I, Normalization

The relational schema for a banking database system is defined below.
Account (account-number, branch-name, balance)
Branch (branch-name, branch-city, assets)
Customer (customer-name, customer-street, customer-city)
Depositor (customer-name, account-number)
Loan-info (branch-name, customer-name, loan-number, amount)

Answer all questions

1. Maximum number of super keys for a relational schema *branch* with *branch-name* as a key is ___ (1 Mark)

2. Is the relation *Borrower* in BCNF? Why? (1 Mark)

3. The decomposition of *Loan-info* with functional dependencies *loan-number → amount, loan-number → branch-name* into *Loan (loan-number, branch-name, amount)* and *Borrower (customer-name, loan-number)* (1 Mark)
    a. Is not lossless decomposition but both are in BCNF
    b. Is lossless decomposition and both are in BCNF
    c. Is not lossless decomposition and both are not in BCNF

4. If there are several customer names associated with a single loan, is the relation *Loan-info* with functional dependencies *loan-number → amount, loan-number → branch-name* in BCNF? Explain? (1 Mark)

5. The relations *Customer* and *Branch* with functional dependencies *customer-name → customer-street, customer-city* are _____. Explain. (2 Marks)
    a. Both in 2NF
    b. Both in 1NF
    c. Both in 3NF
    d. Both in BCNF

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