CLASS: IMSc   SEMESTER: V
BRANCH: MATH   SESSION : MO/2019

SUBJECT : CS4105 DATABASE MANAGEMENT SYSTEM

TIME: 1.5 HOURS   FULL MARKS: 25

INSTRUCTIONS:
1. The total marks of the questions are 30.
2. Candidates may attempt for all 30 marks.
3. In those cases where the marks obtained exceed 25 marks, the excess will be ignored.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. The missing data, if any, may be assumed suitably.

Q1   (a) Why is maintaining integrity difficult in file processing systems?   [2]
     (b) What are the jobs of a database administrator? Describe.   [3]

Q2   (a) How many times are canned transactions executed by parametric users?   [2]
     (b) Describe the classification of DBMS.   [3]

Q3   (a) Explain the meaning of Null valued attributes with examples.   [2]
     (b) How is a relationship set made and how are their primary keys selected in E-R model?   [3]

Q4   (a) Discuss the following: i) Primary key   ii) identifying relationship   [2]
     (b) What are weak entity sets? How are they reduced to relational schemas?   [3]

Q5   (a) What is the relevance of "order in which the tuples appear in a relation"?   [2]
     (b) Consider the following tables: [3]
          branch(branchname, branchcity, assets)
          customer(customername, customerstreet, custcity)
          loan(loannumber, branchname, amount)
          borrower (customername, loannumber)
          account(accountnumber, branchname, balance)
          depositor(customername, accountnumber)
          Use relational algebra to solve the following questions:
          i> Find all customers who have an account at all the branches located in Brooklyn.
          ii>Find all customer names of the city Harrison.

Q6   (a) Consider the following tables:
          Student(rollno, name, dateofbirth, city, state)
          Subject(subjectid, subjectname)
          Marks(rollno, subjectid, midsem, endsem)
          a. Write SQL queries for the following: [2]
            I.   Display the first 50% records from Student table assuming students roll numbers are
                  in a sequence from 1, 2 ,3 and so on and stored in the table in ascending order.

            II. Display the states from where less than 50 students belong.
          b. Write SQL queries for the following: [3]
            I.   Write an SQL query to show one row twice from student table.

            II.   Write an SQL query to display roll number, name, city, state of the students who
          scored more than 50% in subject name "Database Management System". (Midsem holds 40
          marks and end sem holds 60 marks.).