# Daffodil International University

## Department of Computer Science and Engineering

**Faculty of Science and Information Technology (FSIT)**
**Final Examination, Semester: Summer-2018**
**Course Code: CSE311 Course Title: Database Management Systems**
**Section: ALL Course Teacher: ALL**

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**Time: 120 minutes** **Answer all questions** **Total Marks: 40**

**Q1:** Normalize the following table up to Third Normal Form. Be certain to indicate necessary constraints. **[2+3+3]**

**Candidate key {CusID, BankID}**

| CusID | Customer Name | Month | Deposit | BankID | BankName | Savings | Interest |
|---|---|---|---|---|---|---|---|
| 101 | Moslema Khatun | June | 1000 | 1 | DBBL | 50000 | 500 |
| | | | 500 | | | | |
| 201 | Habiba Begum | August | 700 | 2 | NCC | 15000 | 150 |
| 107 | Atifa Alom | April | 600 | | DBBL | 30000 | 300 |
| | | | 400 | 1 | | | |
| 305 | Jinat Khanom | January | 850 | 3 | MBL | 25000 | 250 |

[State any assumptions you make about the data shown in this table.]

**Q2:** Consider the following relational schema. **[6*2=12]**

Writer (writername, citizenship, birthyear)
Manuscript (ISBN, title, writername)
Area (ISBN, subject)
Branch (libname, city)
Instock (ISBN, libname, quantity)

Write the following queries using **Relational Algebra**:

a. Find the ISBN of the Manuscripts which are written by the writers who born in1940.
b. Find the names of libraries in New York.
c. Find the title of each Manuscript on the area of either ophthalmology or neurology.
d. Find the title and writers of each Manuscript of which at least two copies are available in a branch located in Sydney.
e. Find the name of each Italian writer who wrote an auto-biography or on medicine.
f. Find the cities where all Manuscripts is available.

**Q3:** a) Briefly describe why deadlock occurs and how to avoid deadlock. **04**
b) What is Transaction? Describe in details about each states of transaction. **04**

**Q4:** Consider the following schema for a database where the primary keys are given. Give an expression in **SQL** for each of the queries. **[6*2=12]**

Resorts (rid, rname, location, rating, revenue)
Person (Pid, pname, age)
Reservation (rcode, Pid, hid, day)

a) Add a new column in Person table name "Address" after pname and allocate variable size of 30 characters.
b) Update the values for the newly added column.
c) Find the name and the age of the oldest person in the Person table.
d) Find the average revenue of hotels for each rating level.
e) Find the names and locations of Hotel whose rating is better than some hotel called "Chuti Resort".
f) Find all information of Persons who have reserved Resort entitled as "Sairu Hill Resort".