



**Daffodil International University**  
**Department of Computer Science and Engineering**

**Faculty of Science & Information Technology**

**Final Examination, Summer 2020 @ DIU Blended Learning Center**

**Course Code: CSE311 (Day), Course Title: Database Management System**

**Level: 3**

**Term: 1**

**Section: PC-A, PC-B**

**Instructor: Saif Mahmud Parvez**

**Modality: Open Book Exam**

**Date: Saturday 26 August, 2020**

**Time: 02:00-06:00pm**

**Four hours (4:00) to support online open/case study based assessment**

**Marks: 40**

**Directions:**

- **Students need to go through the CASE STUDY shown in this exam paper.**
- **Analyze and answer specific section based on your own thinking and work.**
- **Do not share as this will be treated as plagiarism by Blended Learning Center.**

**Marks**

**Part A**

Dhaka City Corporation (DCC) has decided to make Dhaka to be the true best city in the world. All the personnel in DCC are so much determined. They worked day and night to think how they can make this city better. At the end they thought they must need the help of IT professionals and Urban Planning Team. Urban Planning Team finds out several major things which needs to be changed. IT professionals were to implement this into website and app.

1. Identify 7 major problems in Dhaka city. Create a table for this in your database and also draw the schema for this table. **4**
2. Dhaka City Corporation is divided into Dhaka South City Corporation and Dhaka North City Corporation. Create a proper table for DCC and the employees for DCC. (Write SQL and also draw Schema diagram for the tables) **4**
3. There are many locations like Farmgate, Motijhil, Bongshal, etc, which are either in North City Corporation or South City corporation. Create a table and draw schema for this. **2**
4. Think about 1 more major entity in your database. Now, draw the total schema diagram and make proper relations among these tables. (Guess any necessary attributes you want to provide) **2**
5. Insert 3 rows in each table. (Write the SQL Query only) **3**
6. Write SQL queries to show the contents in each table. **3**

**Part B**

Suppose, you are the team lead of that software project run by DCC. Your app can take user complaints from any user and then inform it to DCC.

7. Create a table for taking complaints from user (Write SQL only). Then write an SQL query to find out the most complained location in DCC. **1+2**

8. Write an SQL query to show the number of complains per location **3**
9. Give an example of how can a subquery be replaced with a join operation **4**

**Part C**

10. Suppose you have a student table. The schema is like: **4**  
 Student = {stdId, stdName, stdBatch, stdMarks, stdDept, stdGrade}

Consider these conditions

stdMarks >=80 ----> A+

70 <= stdMarks < 80 ---> A

60 <= stdMarks < 70 ----> A-

50 <= stdMarks < 60 ---->B

40 <= stdMarks <50 ----> C

stdMarks < 40 ---->F

Write an PL/SQL to calculate stdGrade

11. Normalize the following table up to 3NF **4**

Course Code	Course Venue	Instructor Name	Instructor Phone No
CS101	AB-04	XY	+8860259
CS156	AB-03	YZ	+8860278
CS178	AB-01	XY	+8860259

12. What is deadlock? How can you handle deadlock in database? If a problem how rollback can help? **4**