

# North East University Bangladesh

Department of Computer Science and Engineering

Mid Semester Examination Fall 2021

Program: B.Sc. (Eng.) in CSE

Course: CSE 313 (Database System)

Mark: 30

Time: 1 Hr 30 mins

(Answer any 3 from the following questions)

1.
  - a) List the advantages of DBMS? Define instances and schemas of database? 3
  - b) Compare and Contrast file Systems with database systems? 4
  - c) Explain three level architecture in DBMS. 3
  
2.
  - a) Write short note on Entity-Relationship data model. 3
  - b) Define primary key and foreign key. Explain referential integrity constraint. 4
  - c) Explain Natural Join with Example. 3
  
3. Write SQL statements for following relations: 5x2  
*student (std\_id, name, course\_id, email, cellno)*  
*course (course\_id, course\_title, credit\_hr)*
  - i) Add a column city in student table.
  - ii) Find out list of students who have enrolled in "calculus" course.
  - iii) List name of all courses with their credit\_hr.
  - iv) Find the name of all students start with "a".
  - v) List email and cell no. of all computer science students.
  
4. a) Consider the following employee database, where the primary keys are underlined:  
*employee (employee\_name, street, city)*  
*works (employee\_name, company\_name, salary)*  
*company (company\_name, city)*  
*manages (employee\_name, manager\_name)*  
Give an expression in SQL for each of the following queries:
  - i) Find the names and cities of all employees who work for "First Bank Corporation". 3
  - ii) Find the names, street addresses, and cities of all employees who work for "First Bank Corporation" and earn more than 50,000 BDT 3
  
- b) Illustrate redundancy and the problems that it can cause? 4

A/B 19-11-21  
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