

MIDTERM TEST

NAME : _____

SCORE: _____

YEAR/ SECTION : _____

DATE OF EXAM: _____

Part I: Analysis. Considering the business rules provided, analyze and perform the following tasks.

a. Create the Entity-Relationship Diagram for the following business rule, assume relevant attributes.(10pts)

A Country Bus Company owns a number of busses. Each bus is allocated to a particular route, although some routes may have several busses. Each route passes through a number of towns. One or more drivers are allocated to each stage of a route, which corresponds to a journey through some or all of the towns on a route. Some of the towns have a garage where busses are kept and each of the busses are identified by the registration number and can carry different numbers of passengers, since the vehicles vary in size and can be single or double-decked. Each route is identified by a route number and information is available on the average number of passengers carried per day for each route. Drivers have an employee number, name, address, and sometimes a telephone number.

b. Transform the ERD into Relational Schema.(5pts)

Part II: Application. Use the provided current state of the Company Database in answering the following queries.

EMPLOYEE

Fname	Lname	Ssn	Bdate	Address	Salary	Dno
John	Smith	123456789	1965-01-09	Fondren, Houston, TX	30000	5
Franklin	Wong	333445555	1955-12-08	Voss, Houston, TX	40000	5
Alicia	Zelaya	999887777	1968-01-19	Castle, Spring, TX	25000	4
Jennifer	Wallace	987654321	1941-06-20	Berry, Bellaire, TX	43000	4
Ramesh	Narayan	666884444	1962-09-15	Fire Oak, Humble, TX	38000	5
James	Borg	888665555	1937-11-10	Stone, Houston, TX	55000	1

PROJECT

Pname	Plocation	Pnumber	Dnum
Computerization	Stafford	1	5
Reorganization	Houston	10	1
Newbenefits	Sugarland	20	4

DEPENDENT

Essn	Dependent_name	Relationship
333445555	Alice	Daughter
333445555	Joy	Spouse
333445555	Theodore	Son
987654321	Abner	Spouse
123456789	Michael	Son
123456789	Alice	Daughter
123456789	Elizabeth	Spouse

DEPARTMENT

Dname	Dnumber	Mgr_ssn	Mgr_start_date
Research	5	333445555	1988-04-05
Administration	4	987654321	1995-01-01
Headquarters	1	888665555	1981-06-19

A. Create the SQL command to satisfy the following queries. Write at the space provided.(3pts each)

1. Find all information about John Smith.

2. What department started on April 5, 1988?

3. Where does James Borg lives?

4. Who are the spouses of the employees?

B. Create the SQL command to satisfy the following queries connecting different tables.(5pts each)

6. Who is the manager of Research department?

7. Who are the employees that work on project Newbenefits?

8. Who are dependents of Franklin Wong?

9. Who are the dependents of employees who were assigned to project Computerization?

10. In what department do employees belong, whose dependent are their sons?

Prepared by:

JUNEL B. VENTURA, MIT
Instructor