

Baruch College, CIS Dept, CIS 9340**Midterm Exam**

Name: _____

Section: _____ Id.: _____

(You get 1/5th of the points if you leave an answer blank. You don't get points for a totally wrong answer. You might get partial credit for a partially correct answer.)

1. (30 pts) SQL: For the following, use ('*' indicates primary key):

```
hotel(hotelno*,hotelname,city)
room(roomno*,hotelno*,type,price)
booking(hotelno*,guestno*,datefrom*,dateto,roomno)
guest(guestno*,guestname,guestaddress)
```

- (a) Write create table statement for one of the tables above. Use your best judgement for data types. Write at least 1 insert, update, delete statement for any of the above tables.
- (b) List the names and addresses of all guests with bookings for a hotel in London, alphabetically ordered by name.
- (c) What is the average price of a room?
- (d) What is the lost income from unoccupied rooms at the Grosvenor Hotel?
- (e) What is the most commonly booked room type for each hotel in London?
- (f) Which hotel has the most lost income from unoccupied rooms?

2. (10 pts) Explain how the GROUP BY clause works. What is the difference between WHERE and HAVING clauses?

3. (10 pts) Construct an E-R diagram for a school (ie: your college), that has a set of students, faculty, courses, sections, registration, etc., Document all assumptions that you make about the mapping constraints. Tip: Take some time to think about it. List “objects” and “events” in your design (from above questions).
4. (20 pts) Repeat previous question only using UML.
5. (20 pts) For the following, use:

<i>branch-name</i>	<i>loan-number</i>	<i>amount</i>
Downtown	L-170	3000
Redwood	L-230	4000
Rerryridge	L-260	1700

loan

<i>customer-name</i>	<i>loan-number</i>
Jones	L-170
Smith	L-230
Hayes	L-155

borrower

- (a) Show result of “loan inner join borrower”.
- (b) Show result of “loan left outer join borrower”.
- (c) Show result of “borrower right outer join loan”.
- (d) Show “loan full outer join borrower using (loan-number)”.
6. (10 pts) Assume that you are responsible for selecting a new DBMS product for a group of users at your organization. To undertake this exercise, you must first establish a set of requirements for the group and then identify a set of features that a DBMS product must provide to fulfill the requirements. Describe the process of evaluating and selecting the best DBMS product.