CpSc 4620/6620 Quiz #1

Name: _____ ID: _____

Question #1 (50 points): Suppose your database contains two tables with their data listed in last page of this quiz, please answer the following questions (5 points for each question):

1. Write a MySQL statement that can print out the structure of table pet.
   DESCRIBE pet;

2. Please write a SQL statement to insert a record into the table "pet" with the following values:
   Name: Winne, **Owner:** John, **Species:** Bear, **Sex:** m, **Birth:** 1990-04-08, **Death:** Null
   ```
   INSERT INTO pet VALUES ('Winne', 'John', 'Bear', 'm', '1990-04-08', NULL);
   Or
   INSERT INTO pet VALUES ('Winne', 'John', 'Bear', 'm', '1990-04-08', '\n');
   ```

3. Write SQL statement to list the name, owner and birth date of all female pets that are younger than 1993-01-01.
   ```
   SELECT name, owner, birth FROM pet
   WHERE sex = 'f' and birth > '1993-01-01';
   ```

4. Write SQL statement to show name, species, and birth date of the oldest pet in table pet.
   ```
   SELECT name, species, birth FROM pet
   ORDER BY birth
   LIMIT 1;
   ```

5. Write SQL statement using MySQL pattern matching to show name, owner, and birth date of the pets whose owner name starts with 'G' and end with 'n' in table pet.
   ```
   SELECT name, owner, birth FROM pet
   WHERE owner LIKE 'G%n';
   ```

6. Write SQL statement using regular expression pattern matching to show name, owner, and birth date of the pets whose names start with 'F' and end with 'y' or 'r' in table pet.

   ```
   SELECT name, owner, birth FROM pet
   WHERE name RLIKE "^F.*[yr]$";
   or
   SELECT name, owner, birth FROM pet
   WHERE name REGEXP "^F.*[yr]$";
   ```

7. Write SQL statement to query table pet to show species and the number of pets in each species as num.
   ```
   SELECT species, count(*) as num FROM pet GROUP BY species;
   ```

8. Write SQL statement to display the name, owner, event date, and remarks of pets that had "litter" after 1994-01-01.

```
SELECT event.name, owner, date, remark
FROM event INNER JOIN pet ON event.name=pet.name
WHERE type = "litter" and date > 1994-01-01;
```

9. Write SQL statement to change the sex of pet named "Whistler" to "m".

```
UPDATE pet
SET sex = "m"
WHERE name = "Whistler";
```

10. Write SQL statement to remove all dogs from table pet.

```
DELETE from pet WHERE species ="dog";
```

Question #2 (50 points): Suppose you use a server "mysql.cs.clemson.edu" to host a MySQL database "menagerie". Please answer the following questions:

1. Use only **one** Unix command to log into database "menagerie" from a terminal window opened on machine "ada3.cs.clemson.edu", assuming MySQL client is installed on "ada3.cs.clemson.edu" already, your username is "usr" and password is "pass". (10 points)

```
mysql -h mysql.cs.clemson.edu -u usr -ppass menagerie
```

2. After you log into database, you will enter the MySQL command line interface. Now, you want to create a table "pet" as shown in Question #1. The type for fields "name", "owner", and "species" is character string with length varying from 1 to 20 characters. The field "sex" is CHAR type with length 1. The type for fields "birth" and "death" is DATE. Please create table "pet" using a MySQL command. (10 points)

```
CREATE TABLE pet (name VARCHAR(20), owner VARCHAR(20), species
        VARCHAR(20), sex CHAR(1), birth DATE, death DATE);
```

3. Suppose you have a text file "pet.txt". There are 4 lines of records in this file as follows:

```
Claws, Gwen, cat, m, 1994-03-17, \N
Buffy, Harold, dog, f, 1989-05-13, \N
Bowser, Diane, dog, m, 1979-08-31, 1995-07-29
Whistler, Gwen, bird, \N, 1997-12-09, \N
```

Use **one MySQL statement** to insert all records in file "pet.txt" into the database, assuming you have logged into the MySQL client from a directory where "pet.txt" is located in a local machine. (10 points)

```
LOAD DATA LOCAL INFILE 'pet.txt' INTO TABLE pet FIELDS terminated by ',';
```

4. Suppose table “pet” and “event” contains only the records listed **in the last page of this quiz**, not the records you inserted in the previous question. Please list the return results of the following SQL queries. You need to list all the resulting table column names and all rows returned by the query. (20 points)

   a. SELECT name, species, birth FROM pet
   WHERE species = 'cat' OR species = 'snake';

name	species	birth
Fluffy	cat	1993-02-04
Claws	cat	1994-03-17
Slim	snake	1996-04-29

   b. SELECT * FROM pet
   WHERE name RLIKE '^..i';
   (Note: there are two periods after symbol “^” and before “i”)

name	owner	species	sex	birth	death
Chirpy	Gwen	bird	f	1998-09-11	NULL
Whistler	Gwen	bird	NULL	1997-12-09	NULL
Slim	Benny	snake	m	1996-04-29	NULL

   c. SELECT name, birth, CURDATE() as today,
   (YEAR(CURDATE())-YEAR(birth)) AS age FROM pet
   ORDER BY age LIMIT 1;
   (Note: assume today’s date is 2003-01-01)

name	birth	today	age
Chirpy	1998-09-11	2003-01-01	4

   d. SELECT species, COUNT(*) as num
   FROM pet
   GROUP BY species
   ORDER BY num ASC;

species	num
snake	1
cat	2
bird	2
dog	3

e. SELECT pet.name,
(YEAR(date)-YEAR(birth)) - (RIGHT(date,5)<RIGHT(birth,5)) AS age, remark
FROM pet INNER JOIN event ON pet.name = event.name
WHERE event.type = 'birthday';

name	**age**	**remark**
Fang	8	Gave him a new chew toy
Claws	4	Gave him a new flea collar
Whistler	1	First birthday

Tables and data used in this quiz

Table “pet”

name	owner	species	sex	birth	death
Fluffy	Harold	cat	f	1993-02-04	*NULL*
Claws	Gwen	cat	m	1994-03-17	*NULL*
Buffy	Harold	dog	f	1989-05-13	*NULL*
Fang	Benny	dog	m	1990-08-27	*NULL*
Bowser	Diane	dog	m	1979-08-31	1995-07-29
Chirpy	Gwen	bird	f	1998-09-11	*NULL*
Whistler	Gwen	bird	*NULL*	1997-12-09	*NULL*
Slim	Benny	snake	m	1996-04-29	*NULL*

Table “event”

name	date	type	remark
Fluffy	1995-05-15	litter	4 kittens, 3 female, 1 male
Buffy	1993-06-23	litter	6 puppies, 3 female, 3 males
Buffy	1994-06-19	litter	3 puppies, 3 female
Chirpy	1999-03-21	vet	needed beak straightened
Slim	1997-08-03	vet	broken rib
Bowser	1991-10-12	kennel	*NULL*
Fang	1991-10-12	kennel	*NULL*
Fang	1998-08-28	birthday	Gave him a new chew toy
Claws	1998-03-17	birthday	Gave him a new flea collar
Whistler	1998-12-09	birthday	First birthday