PRIMARY KEY, FOREIGN KEY, and CHECK Constraints

1. What is the purpose of a

- PRIMARY KEY - a set of fields that uniquely identifies each record in a table
- FOREIGN KEY - a set of fields in one table that refers to the primary key in another table.
- CHECK CONSTRAINT - used to limit the value range that can be placed in a column.

2. Using the column information for the animals table below, name constraints where applicable at the table level, otherwise name them at the column level. Define the primary key (animal_id). The license_tag_number must be unique. The admit_date and vaccination_date columns cannot contain null values.

animal_id NUMBER(6)
name VARCHAR2(25)
license_tag_number NUMBER(10)
admit_date DATE
adoption_id NUMBER(5),
vaccination_date DATE

```
Create Table animals(
    animal_id NUMBER(6) PRIMARY KEY
    name VARCHAR(25),
    license_tag_number NUMBER(10) UNIQUE.
    admit_date DATE NOT NULL,
    adaption_id NUMBER(5),
    vaccination_date DATE NOT NULL );
```

3. Create the animals table. Write the syntax you will use to create the table.

```
Create table animals(
    animal_id INT PRIMARY KEY,
    ADMIT_DATE DATE,
    ADOPTION_ID INT, );
```

4. Enter one row into the table. Execute a SELECT * statement to verify your input. Refer to the graphic below for input.

ANIMAL_ID	NAME	LICENSE_TAG_NUMBER	ADMIT_DATE	ADOPTION_ID	VACCINATION_DATE
101	Spot	35540	10-Oct-2004	205	12-Oct-2004

```
Insert into animals (ANIMAL_ID, NAME, LICENSE_TAG_NUMBER,
                     ADMIT_DATE, ADOPTION_ID,
                     VACCINATION_DATE)
values (101, 'spot', '35540', '2004-10-10', 205, '2004-10-12');
```

5. Write the syntax to create a foreign key (adoption_id) in the animals table that has a corresponding primary-key reference in the adoptions table. Show both the column-level and table-level syntax. Note that because you have not actually created an adoptions table, no adoption_id primary key exists, so the foreign key cannot be added to the animals table.

```
Create key animal_id,
ADMIT_DATE DATE,
vaccination_date DATE NOT NULL;
```

6. What is the effect of setting the foreign key in the ANIMAL table as:

a. ON DELETE CASCADE
b. ON DELETE SET NULL

a) when a row in parent table is deleted, all corresponding rows in child table are also automatically deleted

b) when a row in parent table is deleted, the foreign key values in corresponding rows of table are set to NULL

7. What are the restrictions on defining a CHECK constraint?

Check constraint cannot contain subqueries

Check constraint cannot reference columns from other tables.

Evaluation Procedure	Marks awarded
Query(5)	5
Execution (5)	5
Viva(5)	5
Total (15)	15
Faculty Signature	