Quiz: SQL Basics

NOTE: Answers may vary somewhat from what is shown here; your responses will be carefully reviewed.

1. Write an SQL query to retrieve the birth date, first name, last name, gender, and hire date of any employee whose last name is ‘Schusler’.

```sql
SELECT birth_date, first_name, last_name, gender, hire_date
FROM employees
WHERE last_name = 'Schusler';
```

2. Write an SQL query to determine the average salary recorded in the `salaries` table.

```sql
SELECT AVG(salary) AS average_salary
FROM salaries;
```

3. Write an SQL query to retrieve the `first_name` and `last_name` of all employees, but display the columns as `Given Name` and `Family Name` instead.

```sql
SELECT first_name AS "Given Name", last_name AS "Family Name"
FROM employees;
```

4. Write an SQL query to find all employees whose last name contains the letter 'a', with employees listed in ascending order by first name.

```sql
SELECT *
FROM employees
WHERE last_name LIKE '%a%'
ORDER BY first_name ASC;
```

5. Write an SQL query to retrieve the employee id, first name, and last name of all employees who identify as female ('F') and who were born on or after January 1, 1960 (1960-01-01). Order results by last name, then first name, both in ascending order.

```sql
SELECT emp_id, first_name, last_name
FROM employees
WHERE birth_date >= '1960-01-01' AND gender = 'F'
ORDER BY last_name ASC, first_name ASC;
```

6. Write an SQL query to retrieve all employees whose last name starts with the letter 'M', with results shown in order by birth date in ascending order.

```sql
SELECT *
FROM employees
WHERE last_name LIKE 'M%'
ORDER BY birth_date ASC;
```

7. Write an SQL query to determine the highest salary in the `salaries` table.

```sql
SELECT MAX(salary)
AS highest_salary
FROM salaries;
```

8. Write an SQL query to determine how many male employees and how many female employees have worked at the company across its entire history.

```sql
SELECT gender, COUNT(*) AS employee_count
FROM employees
GROUP BY gender;
```

9. Write an SQL query to find the employee id and salary of the lowest paid employee who has ever worked at the company.

```sql
SELECT emp_id, MIN(salary)
FROM salaries
```

10. What is the primary purpose of a Database Management System (DBMS)? Provide a brief explanation.

Answers will vary. Here are three plausible responses:

i. The main job of a Database Management System (DBMS) is to organize, store, and manage data in a way that makes it easy to access, update, and secure. It helps users find and modify information quickly, without having to deal with all the complex details of the storage.

ii. A DBMS is software that helps manage large amounts of data. It allows users to add, remove, or search for information in an organized way, and ensures that the data is protected and consistent.

iii. A DBMS is different from spreadsheets because it helps organize and manage large amounts of data more easily. While spreadsheets can become confusing with a lot of information, a DBMS makes sure the data is structured properly and easy to access. A DBMS is better for handling more complex data needs, like tracking relationships between different sets of information.