**SQL Övningstenta (Ny Version)**

**Tillåtna hjälpmedel:**

Ett A4-papper med handskrivna anteckningar (båda sidor).

**Tid:** 4 timmar  
**Betygssättning:**

* Godkänt: 50% dvs 15 poäng
* Väl godkänt: 80% dvs 24 poäng

**Fråga 1 *(1p)***

Which SQL clause is used to filter rows after an aggregation with GROUP BY?  
a) WHERE  
b) HAVING  
c) FILTER  
d) GROUP FILTER  
e) AFTER

**Fråga 2 *(1p)***

What will the following query return?

sql

Copy code

SELECT COUNT(\*)

FROM employees

WHERE department IS NULL;

a) Total rows with NULL in the department column.  
b) All rows in the table.  
c) Rows where department is not empty.  
d) Rows with no salaries.  
e) None of the above.

**Fråga 3 *(1p)***

What is the difference between INNER JOIN and LEFT JOIN?

**Fråga 4 *(2p)***

You have a table called orders. Write a query to get the total number of orders grouped by customer ID, sorted in descending order by total orders.

**Fråga 5 *(2p)***

Explain the result of this query:

sql

Copy code

SELECT product\_id, SUM(quantity)

FROM sales

GROUP BY product\_id

HAVING SUM(quantity) > 100;

**Fråga 6 *(2p)***

Write a query to retrieve all employees who were hired after January 1, 2020, from the table employees.

**Fråga 7 *(2p)***

Given a table inventory, what will this query return?

sql

Copy code

SELECT product\_name

FROM inventory

WHERE stock < 10

LIMIT 5;

Describe what the query does and the type of result it generates.

**Fråga 8 *(2p)***

You have two tables, products and sales. Write a query to display all products that have not been sold.

**Fråga 9 *(2p)***

Explain what happens when you run the following query:

sql

Copy code

SELECT department, AVG(salary)

FROM employees

GROUP BY department

ORDER BY AVG(salary) DESC;

**Fråga 10 *(3p)***

You have two tables: customers and orders. Write a query to find customers who have placed more than 3 orders.

**Extra Frågor (Fokus på Lön)**

**Fråga 11 *(2p)***

Write a query to find the highest salary from the table salaries where the department is 'IT'.

**Fråga 12 *(2p)***

Write a query to display the average salary for each department in descending order. Use the table salaries.

**Fråga 13 *(2p)***

Update all salaries in the salaries table by increasing them by 15% for employees in the HR department.

**Facit (Solutions)**

* **Fråga 1:** b) HAVING
* **Fråga 2:** a) Total rows with NULL in the department column.
* **Fråga 3:**  
  INNER JOIN returns matching rows between both tables, while LEFT JOIN includes all rows from the left table and NULL for unmatched rows in the right table.
* **Fråga 4:**

sql

Copy code

SELECT customer\_id, COUNT(\*) AS total\_orders

FROM orders

GROUP BY customer\_id

ORDER BY total\_orders DESC;

* **Fråga 5:** Returns product IDs where the total quantity sold exceeds 100.
* **Fråga 6:**

sql

Copy code

SELECT \*

FROM employees

WHERE hire\_date > '2020-01-01';

* **Fråga 7:** Retrieves up to 5 product names with stock less than 10.
* **Fråga 8:**

sql

Copy code

SELECT p.product\_id, p.product\_name

FROM products p

LEFT JOIN sales s ON p.product\_id = s.product\_id

WHERE s.product\_id IS NULL;

* **Fråga 9:** Displays the average salary for each department, sorted in descending order.
* **Fråga 10:**

sql

Copy code

SELECT c.customer\_id, COUNT(\*) AS order\_count

FROM customers c

JOIN orders o ON c.customer\_id = o.customer\_id

GROUP BY c.customer\_id

HAVING COUNT(\*) > 3;

**Extra Frågor (Lön)**

* **Fråga 11:**

sql

Copy code

SELECT MAX(salary)

FROM salaries

WHERE department = 'IT';

* **Fråga 12:**

sql

Copy code

SELECT department, AVG(salary) AS avg\_salary

FROM salaries

GROUP BY department

ORDER BY avg\_salary DESC;

* **Fråga 13:**

sql

Copy code

UPDATE salaries

SET salary = salary \* 1.15

WHERE department = 'HR';

Let me know if you need further modifications! 😊