ASSIGNMENT - SQL

1.Write a SQL query to retrieve all records from a table named "Customers."

ANS: select * from customers;

2. How would you select the top 5 highest-paid employees from a table named "Employees"?

ANS: select * from employees order by SALARY DESC LIMIT 5;

3. Explain the difference between the WHERE clause and the HAVING clause in SQL.

ANS: Where and having clause is used to filter the data, where clause is used to filter single row level of data And having clause is used to print data with contain aggregate function.

4. Write a SQL query to calculate the average salary of all employees in a table named "Employee Details."

ANS: Select top 50 percent * from employee; select avg (SALARY) FROM employee_details;

5. What is the purpose of the GROUP BY clause in SQL? Provide an example query that utilizes it. ANS: Group by clause is used to group rows that having same value in specified column.The group by function is often used with aggregate function, Eg: Select department(salary) as result From worker Group by department;

6. Write a SQL query to retrieve the names and ages of all employees from a table named "Employees." ANS: select name, age FROM Employees;

7. How would you calculate the total sales amount for each month of the year from a table named "Sales" that has a "Date" column?

ANS: select product, year(date),month(date), sum(sale) from sales group by product, year(date),month(date) order by product, year(date),month(date);

8. Explain the difference between the INNER JOIN and LEFT JOIN in SQL.

ANS: Inner join Inner join will be return the record that having pair on both sides. Left join If we need all record from left table no matter if they have pair in the right table

9. Write a SQL query to find the second highest salary from a table named "Employees." ANS: SELECT DISTINCT Salary FROM employee ORDER BY Salary DESC LIMIT 1 OFFSET 1;

10.How would you add a new column named "City" to a table named "Customers" with the data type VARCHAR(50)?

ANS: Alter table Customers Add City varchar(100);

11.Write a SQL query to retrieve the names of customers who have not made any purchases from a table named "Customers" and a table named "Orders."

ANS: SELECT Customers.Customername FROM Customers Left join Orders ON Customers.CustomerID = Orders.CustomerID Where Orders.OrderID IS NULL;

12.Explain the purpose of the SQL functions COUNT(), SUM(), and AVG().

ANS: Count(): This function counts the number of rows in a result set or the number of non-null values in a specified column it can be also use in counting rows in a table.

Sum(): This function calculate the sum of all values in a specified column.

Avg(): This function calculate the average or mean values in a specified column.

13.How would you retrieve the top 3 most frequent values from a column named "Category" in a table named "Products"?

ANS: SELECT Category, COUNT(*) AS Frequency FROM Products GROUP BY Category ORDER BY Frequency DESC LIMIT 3;

14.Write a SQL query to update the "Quantity" column of a table named "Inventory" by doubling the current values for all items where the "Category" is equal to "Electronics."

ANS: Update inventory Set quantity = quantity *2 Where category = electronics;

15.Explain the difference between the UNION and UNION ALL operators in SQL.

ANS: Union operator: The Union operator is used to combine the result sets of multiple select queries into a single result set.It remove the duplicate value from the combine result.

Union all operator: The Union operator is used to combine the result sets of multiple select queries into a single result set.it will not remove duplicate row.

16.How would you update the "Email" column of a table named "Contacts" to change all email addresses ending with "@old.com" to end with "@new.com"?

ANS: Update contact Set email =replace(email,'@old.com','@new.com') Where email like '@old.com';

17.Write a SQL query to display the names of all customers who have made at least two purchases. ANS: select customername from customers where customerid in (select customerid from orders group by customerid having count(orderid) >= 2);

18.Explain the difference between a primary key and a foreign key in a database.

ANS: Primary key: primary key is a unique identification key for each record in a table

Foreign key:A foreign key establishes a relationship between tables by referencing the primary key by another table

19.How would you delete all records from a table named "Products" where the "Category" column value is equal to "Books"?

ANS: Delete from products Where category = books;

20.Write a SQL query to retrieve the total count of orders for each customer from a table named "Orders."

ANS: select customer_id, count(order_id) as total_orders from orders group by customer_id;