**Excel:**

1. **Question:** What is the purpose of the VLOOKUP function in Excel, and how is it used?

**Answer:** VLOOKUP is used to search for a specific value in a table and return a corresponding value from another column. It's often used for data matching. For example, **=VLOOKUP("Product A", A2:B10, 2, FALSE)** would look for "Product A" in the range A2:A10 and return the corresponding value from column B.

1. **Question:** How can you protect an Excel worksheet or workbook with a password?

**Answer:** To protect a worksheet or workbook with a password, go to the "Review" tab, click "Protect Sheet" or "Protect Workbook," and set a password. This ensures that only users with the password can make changes.

1. **Question:** What is conditional formatting in Excel, and why is it useful?

**Answer:** Conditional formatting allows you to format cells based on specific criteria. It's useful for highlighting data patterns and making data more visually informative.

1. **Question:** How would you create a pivot table in Excel, and why are pivot tables useful for data analysis?

**Answer:** To create a pivot table, select the data range, go to the "Insert" tab, and click "PivotTable." Pivot tables are useful for summarizing and analyzing data as they allow you to quickly generate reports and analyze data trends.

1. **Question:** How do you handle and correct errors in Excel, such as #N/A or #DIV/0!?

**Answer:** Errors in Excel can be corrected using functions like IFERROR or by validating data entries. For example, you can use **=IFERROR(Formula, "Error Message")** to replace an error with a custom message.

**MySQL:**

1. **Question:** Explain the difference between INNER JOIN and LEFT JOIN in SQL.

**Answer:** INNER JOIN retrieves only the matching records from both tables, while LEFT JOIN retrieves all records from the left table and the matching records from the right table, filling in with NULLs if there's no match.

1. **Question:** What is the primary key in a database, and why is it important?

**Answer:** The primary key is a unique identifier for each record in a table. It's crucial for data integrity and ensures that each record can be uniquely identified.

1. **Question:** How would you sort the results of an SQL query in ascending order?

**Answer:** To sort results in ascending order, you can add **ORDER BY column\_name ASC** to your SQL query. For example, **SELECT \* FROM table\_name ORDER BY column\_name ASC**.

1. **Question:** How do you delete records from a MySQL table using SQL?

**Answer:** You can use the DELETE statement. For example, to delete a record where ID is 1, you would use **DELETE FROM table\_name WHERE ID = 1**.

1. **Question:** What is a SQL subquery, and how would you use it in a query?

**Answer:** A SQL subquery is a query nested within another query. It's used to retrieve data based on the results of an outer query. For example, you can use a subquery to find all customers who made a purchase over $100: **SELECT \* FROM customers WHERE ID IN (SELECT CustomerID FROM orders WHERE Amount > 100)**.

**Power BI:**

1. **Question:** What is Power Query in Power BI, and how does it help in data analysis?

**Answer:** Power Query is a data transformation and preparation tool in Power BI. It helps in cleaning, shaping, and transforming data from various sources into a suitable format for analysis.

1. **Question:** How can you create a calculated column in Power BI, and why might you use one?

**Answer:** To create a calculated column, you can use the Data Modeling tab in Power BI. Calculated columns are used to add new data fields to your dataset based on existing columns, which can be helpful for creating custom metrics or flags.

1. **Question:** What is the difference between a slicer and a filter in Power BI?

**Answer:** A slicer is a visual element that allows users to interactively filter data by selecting specific values, while a filter can be applied to visuals to restrict what data is displayed. Slicers are user-driven, while filters are applied by the report creator.

1. **Question:** How do you create a relationship between tables in Power BI?

**Answer:** To create a relationship between tables in Power BI, go to the "Model" view, drag and drop a field from one table to a related field in another table. Ensure that the data types and cardinality match.

1. **Question:** What is the purpose of a measure in Power BI, and how do you create one?

**Answer:** A measure is a calculation used for aggregations or calculations on data. To create a measure, go to the "Modeling" tab, click on "New Measure," and write a DAX expression. Measures are typically used for calculations like sums, averages, or ratios.

**Tableau:**

1. **Question:** What is a dimension and a measure in Tableau?

**Answer:** Dimensions are categorical or qualitative data, like product names or categories. Measures are quantitative data that can be aggregated, like sales revenue or profit.

1. **Question:** How would you create a dashboard in Tableau, and why are dashboards useful for data analysis?

**Answer:** To create a dashboard in Tableau, you can drag and drop visualizations onto a canvas and arrange them as needed. Dashboards are useful for consolidating key information from multiple worksheets in one place, making it easy to visualize and analyze data.

1. **Question:** What is the difference between a filter and a highlight action in Tableau?

**Answer:** A filter action allows you to control multiple visualizations by selecting values in one, while a highlight action emphasizes data in other visualizations when you select data points in one visualization.

1. **Question:** How do you create a calculated field in Tableau, and when might you use one?

**Answer:** To create a calculated field, right-click in the "Data" pane and select "Create Calculated Field." Calculated fields are useful for creating custom fields, performing calculations, or combining existing fields in unique ways.

1. **Question:** Explain the concept of data blending in Tableau, and when is it necessary?

**Answer:** Data blending is used when data comes from different data sources, and it's necessary to combine them for analysis. It's done by identifying common dimensions and blending data based on those dimensions. Data blending is helpful when a direct relationship (join) isn't possible.