Q.1: What is Power BI and how does it differ from Excel? \n",

- Power BI is a cloud-based business analytics tool that helps visualize and share insights from data. Unlike Excel, which is a spreadsheet application primarily for data manipulation and analysis, Power BI allows users to create interactive dashboards, reports, and handle larger datasets with advanced data modeling and visualization.

Q.2: Explain the concept of data modelData modeling in Power BI

- Data modeling in Power BI refers to the process of designing the relationships between tables in a data model, defining calculations, and organizing the data structure to enable easy reporting and analysis. It includes defining tables, columns, relationships, and creating measures to represent metrics.

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Q.3: What are the different types of connections available in Power BI?

- Power BI offers DirectQuery, Import, and Live Connection modes:

Import: Data is loaded into Power BI.

DirectQuery: Data remains in the source and is queried in real-time.

Live Connection: Connection to live data sources like SQL Server or Analysis Services

Q.4: How do you handle data transformation in Power BI?

-Data transformation in Power BI is done using Power Query Editor. It allows you to clean, reshape, and manipulate data through steps like filtering, grouping, merging tables, changing data types, and adding calculated columns before importing data into the model.

Q.5: What is DAX (Data Analysis Expressions) and why is it important in Power BI?

-DAX is a formula language used in Power BI to define custom calculations, such as measures and calculated columns. It’s essential because it enables advanced analytics and the creation of dynamic calculations within reports.

Q.6: Can you explain the difference between calculated columns and measures in Power BI?

-Calculated Columns: These are columns created within a table that perform row-by-row calculations and are part of the data model.

Measures: These are calculations based on aggregations or summaries that are computed at query time, usually for metrics like totals, averages, or ratios.

Q.7: How do you handle relationships between tables in Power BI?

-Relationships between tables are defined by key fields (such as a foreign key to a primary key) in the Model View. You can create one-to-many, many-to-one, or many-to-many relationships to link tables together for analysis and reporting.

Q.8: What is the purpose of a Power BI Gateway?

-A Power BI Gateway acts as a bridge between on-premises data sources (like SQL Server) and Power BI cloud services, enabling data to refresh automatically and securely in the cloud.

Q.9: How can you schedule data refresh in Power BI Service?

-In Power BI Service, you can schedule a data refresh by configuring the Scheduled Refresh option in the dataset settings. This allows you to set automatic refresh intervals for keeping reports up-to-date.

Q.10: Explain the concept of row-level security in Power BI

-Row-level security (RLS) in Power BI restricts data access based on the user’s role. It enables different users to view different subsets of data, ensuring that each user sees only the data they are authorized to access based on defined security rules.

Q.11: What is Power BI Desktop and how does it differ from Power BI Service?

- Power BI Desktop is a free, desktop application used for data modeling, report creation, and data transformation. It is typically used for designing reports before publishing them.

Power BI Service is a cloud-based platform for sharing, collaborating, and viewing reports and dashboards created in Power BI Desktop. It also supports data refresh and online access to reports.

"Q.12: Explain the concept of Direct Query in Power BI.\n",

"- DirectQuery allows Power BI to query data directly from the source without importing it. This is useful when working with large datasets that need real-time or near real-time updates, but it can affect performance compared to importing data."

"Q.13: What are Power BI templates and how are they useful?\n",

"- Power BI Templates (.pbit) are pre-configured reports and data models that include queries, visuals, and measures. They allow users to reuse a standardized report structure with different datasets, making report creation faster and more consistent.\n"

"Q.14: How do you handle incremental data refresh in Power BI?\n",

"- Incremental data refresh allows you to refresh only new or updated data in a large dataset rather than reloading all the data. This improves performance by reducing refresh times for large datasets."

"Q.15: What is the role of Power Query in Power BI?\n",

"- Power Query is used for data extraction, transformation, and loading (ETL) in Power BI. It enables users to clean, reshape, and modify data before loading it into the model for analysis."

"Q.16: Explain the difference between calculated columns and calculated tables in Power BI.\n",

"- Calculated Columns: These are new columns added to a table, calculated row by row, and stored in the model.\n",

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"Calculated Tables: These are tables created using DAX expressions, often based on other tables, and can be used for advanced modeling or creating custom aggregations."

"Q.17: How do you create custom visuals in Power BI?\n",

"- Custom visuals in Power BI can be created using the Power BI Developer Tools, which allow developers to build and import unique visualizations using JavaScript and other web technologies. These can be added to reports from the marketplace or developed from scratch."

"Q.18: What are the best practices for optimizing performance in Power BI?\n",

"- Minimize the use of complex DAX calculations.\n",

"Limit the number of visuals on each report page.\n",

"Use Import Mode over DirectQuery where possible.\n",

"Optimize data models by removing unnecessary columns and tables.\n",

"Use aggregations and manage relationships efficiently."

"Q.19: How can you integrate Power BI with other Microsoft products like Azure and Office 365?\n",

"- Power BI integrates seamlessly with Azure for data storage, processing, and AI services. With Office 365, Power BI can connect to SharePoint, Excel, and Teams for collaboration, sharing, and embedding reports directly within apps like Excel and Outlook."

"Q.20: Explain the concept of aggregations in Power BI.\n",

"- Aggregations in Power BI refer to the process of pre-summarizing data at a higher level (e.g., summing sales by month) to improve performance. This allows for faster querying and visualization by reducing the amount of data processed at the report level."

"Q.21: How do you handle error handling and data quality in Power BI?\n",

"- In Power BI, you can handle errors by using Power Query transformations (e.g., handling nulls, replacing errors) and DAX error functions. It's also important to validate data inputs, use correct data types, and ensure that relationships between tables are properly defined."

"Q.22: What is the purpose of Power BI Embedded and when would you use it?\n",

"- Power BI Embedded allows developers to embed interactive Power BI reports and dashboards within custom applications. It's useful when you want to provide rich data insights to users within your own app, without requiring them to have a Power BI license."