## **1) What is Power BI and how does it differ from Excel?**

* Power BI is a data visualization and business intelligence tool that creates interactive dashboards. Unlike Excel, it handles large datasets, offers advanced visuals, and supports cloud-based sharing.

## **2) Explain the concept of data modeling in Power BI.**

* Data modeling involves connecting and organizing tables with relationships and defining measures/columns using DAX to create meaningful analysis.

## **3) What are the different types of connections available in Power BI?**

* Import, DirectQuery and Live Connection.

## **4) How do you handle data transformation in Power BI?**

* Using Power Query Editor for cleaning, filtering, merging, pivoting, and shaping data before loading it to the model.

## **5) What is DAX and why is it important in Power BI?**

* DAX (Data Analysis Expressions) is a formula language for creating custom calculations like measures and columns in Power BI.

## **6) Difference between calculated columns and measures?**

* Calculated Columns: Row-wise, stored in the table.  
   Measures: Aggregated values, calculated on the fly based on filters.

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## **7) How do you handle relationships between tables?**

* By creating relationships in the model view using primary and foreign keys (one-to-many or many-to-one).

## **8) What is the purpose of a Power BI Gateway?**

* It connects on-premises data sources to Power BI Service for secure data refresh and live queries.

## **9) How can you schedule data refresh in Power BI Service?**

* Go to Dataset > Settings > Schedule Refresh and set time and frequency.

## **10) What is row-level security in Power BI?**

* RLS restricts data access for users based on roles, allowing each user to see only relevant data.

## **11) What is Power BI Desktop and how does it differ from Power BI Service?**

* Power BI Desktop is for report creation; Power BI Service is for sharing, collaboration, and refresh in the cloud.

## **12) Explain the concept of DirectQuery.**

* DirectQuery fetches data directly from the source in real-time without importing it into Power BI.

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## **13) What are Power BI templates?**

* Templates (.PBIT) save report structure without data, useful for sharing reusable report formats.

## **14) How do you handle incremental data refresh?**

* Enable in Power BI Desktop with date filters; configure in Service to refresh only new/changed data.

## **15) What is the role of Power Query?**

* Power Query transforms and prepares data before loading it into Power BI for analysis(replacing null values , dealing with duplicate values, calculation and etc).

## **16) Difference between calculated columns and calculated tables?**

* Calculated Column: Adds new column to a table.  
   Calculated Table: Creates new table from DAX expressions.

## **17) How do you create custom visuals in Power BI?**

* using TypeScript with Power BI Custom Visual SDK.

## **18) Best practices for optimizing performance:**

* Use star schema , avoid unnecessary columns, minimize visuals, optimized DAX expressions.

## **19) How to integrate Power BI with Azure & Office 365?**

* Azure: Use Azure SQL  
   Office 365: Embed reports in Teams, SharePoint, and Outlook

## **20) Explain the concept of aggregations.**

* Aggregations improve performance by summarizing large datasets at a higher level for faster performing queries.

## **21) How to handle errors and data quality?**

* Use Power Query to remove errors, validate data types, and apply filters and data profilings.

## **22) What is Power BI Embedded?**

* It allows developers to embed Power BI reports into custom applications using APIs