

Power BI theory questions and answers

Q1) What is Power BI and how does it differ from Excel?

A1) Power BI is a business analytics tool that provides interactive visualizations and business intelligence capabilities. Unlike Excel, which is primarily a spreadsheet application, Power BI is designed for data visualization and sharing insights across organizations.

Q2) Explain the concept of data modelling in Power BI.

A2) Data modelling in Power BI involves creating relationships between different data sources and tables to enable efficient data analysis and reporting. It allows users to define how data is connected and how it can be queried.

Q3) What are the different types of connections available in Power BI?

A3) Power BI supports various connection types, including DirectQuery, Import, and Live Connection. These connections determine how data is accessed and refreshed from the source.

Q4) How do you handle data transformation in Power BI?

A4) Data transformation in Power BI is handled using Power Query, where users can clean, reshape, and transform data before loading it into the model, using a user-friendly interface.

Q5) What is DAX (Data Analysis Expressions) and why is it important in Power BI?

A5) DAX is a formula language used in Power BI for creating custom calculations and aggregations. It is essential for building measures and calculated columns that enhance data analysis.

Q6) Can you explain the difference between calculated columns and measures in Power BI?

A6) Calculated columns are computed row-by-row and stored in the data model, while measures are calculations performed on aggregated data and are evaluated in the context of the report.

Q7) How do you handle relationships between tables in Power BI?

A7) Relationships between tables in Power BI are managed in the model view, where users can define one-to-one, one-to-many, or many-to-many relationships to enable data analysis across tables.

Q8) What is the purpose of a Power BI Gateway?

A8) A Power BI Gateway acts as a bridge between on-premises data sources and Power BI cloud services, allowing secure data transfer and refreshes.

Q9) How can you schedule data refresh in Power BI Service?

A9) Data refresh can be scheduled in Power BI Service by configuring the dataset settings, where users can set up refresh frequency and time.

Q10) Explain the concept of row-level security in Power BI.

A10) Row-level security (RLS) restricts data access for specific users based on their roles, ensuring that users only see data relevant to them.

Q11) What is the Power BI Desktop and how does it differ from Power BI Service?

A11) Power BI Desktop is a desktop application for creating reports and data models, while Power BI Service is a cloud-based platform for sharing and collaborating on reports and dashboards.

Q12) Explain the concept of Direct Query in Power BI.

A12) Direct Query allows Power BI to query data directly from the source in real-time without importing it, which is useful for large datasets that need up-to-date information.

Q13) What are Power BI templates and how are they useful?

A13) Power BI templates are pre-defined report layouts and data models that can be reused, saving time and ensuring consistency across reports.

Q14) How do you handle incremental data refresh in Power BI?

A14) Incremental data refresh in Power BI is configured to only refresh new or changed data rather than the entire dataset, improving performance and efficiency.

Q15) What is the role of Power Query in Power BI?

A15) Power Query is used for data extraction, transformation, and loading (ETL) processes, allowing users to connect to various data sources and prepare data for analysis.

Q16) Explain the difference between calculated columns and calculated tables in Power BI.

A16) Calculated columns are derived from existing columns in a table, while calculated tables are new tables created using DAX expressions based on existing data.

Q17) How do you create custom visuals in Power BI?

A17) Custom visuals can be created using the Power BI Developer Tools or by importing visuals from the Microsoft AppSource marketplace, allowing for tailored visualizations.

Q18) What are the best practices for optimizing performance in Power BI?

A18) Best practices include reducing data volume, optimizing DAX calculations, using appropriate data types, and managing relationships effectively to enhance report performance.

Q19) How can you integrate Power BI with other Microsoft products like Azure and Office 365?

A19) Power BI integrates with Azure services for data storage and processing, and with Office 365 for collaboration and sharing reports through tools like SharePoint and Teams.

Q20) Explain the concept of aggregations in Power BI.

A20) Aggregations in Power BI are pre-calculated summaries of data that improve query performance by reducing the amount of data processed during analysis.

Q21) How do you handle error handling and data quality in Power BI?

A21) Error handling and data quality can be managed through data validation techniques in Power Query, using error-checking functions

Q22) What is the purpose of Power BI Embedded and when would you use it?

A22) Power BI Embedded allows developers to integrate Power BI reports and dashboards into their applications, providing users with interactive data visualizations without needing a separate Power BI account. It is useful for SaaS applications that require embedded analytics for end-users.