

Question-1

Power BI is a business analytics tool where users are able to visualize data, share insights which then helps to make data-driven decisions. Power BI It connects to various data sources, transforms raw data into meaningful insights, and presents them through interactive dashboards, reports, and visualizations.

Its main three components are **Power BI Desktop, Power BI Service, Power BI mobile apps**

Question-2

First case where Power BI can be used is to observe sales performance of a company.

Monitoring **monthly sales, top-selling products, sales by region, and sales team performance.**

Secondly, I think Power BI can be very useful in Finance department where financial experts can see revenue, expenses, profit margins.

Question 3

Power BI can be downloaded through this link from Microsoft's official website

<https://powerbi.microsoft.com/desktop>.

Question 4

First obvious distinction between them is Power BI is for building reports and Power BI service is for sharing, collaborating, and viewing reports online. Second difference is that Power BI desktop is free to use while Power BI service requires to have a license or subscription for Premium version of the tool. Also, Power BI desktop connects to multiple sources like SQL, EXCEL while Power BI service uses databases that were published from desktop.

Question 5

A Power BI project in Power BI desktop uses **.pbix** file extension. It stands for Power BI File and contains Queries, Visualizations, reporting and formatting, Data models and connections.

Question 6

Power Query plays an important role in Power BI to import, clean, transform data before it is loaded into the Power BI.

It helps us to combine multiple data sources easily, helps to clean the data, rename columns. Once transformation steps are defined, Power Query automatically refreshes data.

Question 7

There are plenty of reasons why businesses might prefer Power BI than Excel are for following reasons: Power BI has more advanced Data Visualization with interactive visuals and dashboards while Excel has only basic charts and statistical values, Power BI handles large datasets but with Excel Performance drops when dataset gets larger, **Power BI** is built for **modern, scalable,**

interactive business intelligence, while **Excel** is better for **manual, ad-hoc analysis and calculations**.

Question 8

There are clear limitations of using free version of Power BI.

- 1) No collaboration or sharing
- 2) No access to Power BI Apps or Workspaces
- 3) Limited to local use
- 4) No AI features or advanced Insights

Question 9

Published report in Power BI service refers to (.pbix file) that has been uploaded or published from Power BI desktop to the cloud-based Power BI platform.

Question 10

Power BI Mobile enhances accessibility by enabling users to access, view, and interact with reports and dashboards anytime, anywhere using mobile devices such as smartphones and tablets.

For example, a **sales manager** traveling to a client meeting can use Power BI Mobile to **instantly check sales performance, inventory status, or team progress** from their phone — without opening a laptop.

Question 11

Power BI is easier for beginners while Tableau is more powerful ,steeper learning.

Power BI is cheaper than Tableau with monthly fees approximately 10\$ and 70 \$ respectively.

Power BI is good with Microsoft tools while Tableau less Microsoft friendly but flexible.

Tableau deals better with larger datasets while Power BI is for medium sized datasets.

Question 12

Azure Service	Integration with Power BI	Use Case
Azure SQL Database	Direct connector to pull live or scheduled data into Power BI	Create reports from transactional data stored in the cloud
Azure Data Lake Storage (Gen1 & Gen2)	Store big data and connect it to Power BI for analysis	Analyze large volumes of structured and unstructured data

Azure Service	Integration with Power BI	Use Case
Azure Synapse Analytics	Run big data queries and visualize results in Power BI	Combine data warehousing + BI for enterprise reporting
Azure Machine Learning	Use ML models inside Power BI reports (with real-time predictions)	Predict customer churn, forecast sales, detect anomalies
Azure Analysis Services	Acts as a semantic model layer for Power BI	Reuse complex data models across multiple reports and users
Azure Data Factory	Prepares and transforms data before loading into Power BI	Build automated ETL pipelines feeding into Power BI dashboards
Azure Stream Analytics	Send real-time data to Power BI dashboards	Live dashboards for IoT, finance, or social media monitoring
Azure Blob Storage	Connect and visualize flat files (CSV, JSON, etc.) stored in cloud	Lightweight data storage for ad-hoc Power BI reports
Azure Active Directory (AAD)	Provides user authentication and role-based access	Manage secure access and implement row-level security in Power BI

Question 13

Power BI Gateway is like a bridge which connects data sources(SQL, Excel, Oracle databases) to Power BI Service(Cloud) enabling automated refreshes and live connections for accurate, real-time reporting.

Gateways are needed when data is stored not in the cloud but when stored in different data sources, when company restricts cloud data sources

Question 14

There are several ways to convince Businesses to adopt Power BI saying that it is very cheap with just 10 dollars per month. It really saves time by automating data cleaning ,refreshing and visualization. It helps to make better and faster business decision because Real-time dashboards allow leaders to act quickly on trends, risks, or opportunities. Interactive visuals make it easier to **understand patterns and KPIs** briefly.

Question 15

To protect sensitive data at every stage Power BI presents key security features:

1. Azure Active Directory (AAD) Integration

- Provides **Single Sign-On (SSO)** and **multi-factor authentication (MFA)**.

- Ensures only **authorized users** can access Power BI resources.
- Enforces corporate security policies.

2. Secure Data Gateways

Connects Power BI Service to on-premises data without exposing it to the cloud.

Uses Azure Service Bus and encrypted channels for secure data movement.

3. Sensitive Labels (Microsoft Information Protection)

Apply labels like “Confidential” or “Public” to reports and datasets.

These labels travel with the file and are enforced across Microsoft 365 apps.

4. Private and VNet Gateways (Premium)

Secure your data sources by restricting access to only trusted network environments using Virtual Networks (VNet).