

1. What is Power BI, and what are its three main components?

Power BI is Microsoft's business intelligence and data visualization tool that allows users to connect, analyze, and present data interactively.

The three main components are:

- **Power BI Desktop** (for creating reports and models)
- **Power BI Service** (cloud-based sharing and collaboration platform)
- **Power BI Mobile** (apps for on-the-go access to dashboards and reports)

2. Name two business use cases for Power BI dashboards.

- **Sales Performance Tracking** – Monitoring revenue, top-selling products, and regional performance.
- **Financial Analysis** – Comparing actual vs. budgeted expenses, forecasting, and profit margin analysis.

3. How do you download and install Power BI Desktop?

- Go to the [Microsoft Power BI website](#).
- Click **Download Free** or get it via the **Microsoft Store**.
- Run the installer and follow on-screen instructions to install.

4. What is the difference between Power BI Desktop and Power BI Service?

- **Power BI Desktop**: Free Windows application used to create and design reports.
- **Power BI Service**: Cloud-based platform for publishing, sharing, and collaborating on reports and dashboards.

5. What file extension does a Power BI project use?

- **.pbix** (Power BI report file).

6. Explain the role of Power Query in Power BI.

Power Query is the ETL (Extract, Transform, Load) tool within Power BI. It allows users to connect to different data sources, clean and transform the data, and load it into the data model for reporting.

7. Why would a business prefer Power BI over Excel for reporting?

- More **interactive visualizations** and real-time dashboards.
- Handles **larger datasets** efficiently.
- Easier **collaboration and sharing** via the cloud.
- Built-in **AI and integration** with other Microsoft services.

8. Describe one limitation of the free version of Power BI.

- Reports cannot be shared with others in the cloud (sharing requires **Power BI Pro license**).

9. What is a "published report" in Power BI Service?

A published report is a Power BI Desktop report (.pbix file) uploaded to the **Power BI Service**, making it available online for collaboration, sharing, and scheduled refreshes.

10. How does Power BI Mobile enhance accessibility?

Power BI Mobile allows users to access, view, and interact with dashboards and reports on **iOS, Android, and Windows devices**, ensuring decision-makers have data insights anytime, anywhere.

11. Compare Power BI with Tableau—pros and cons.

- **Power BI Pros:** Lower cost, strong Microsoft ecosystem integration, user-friendly, good for SMEs.
- **Power BI Cons:** Limited customization, performance issues with very large datasets.
- **Tableau Pros:** Advanced visualizations, handles large datasets efficiently, more customization.
- **Tableau Cons:** Higher cost, steeper learning curve, weaker Microsoft integration.

12. Explain how Power BI integrates with Azure services.

- **Azure SQL Database and Azure Data Lake** as data sources.
- **Azure Machine Learning** for predictive analytics inside reports.
- **Azure Synapse Analytics** for enterprise-scale data modeling and queries.

13. What are "gateways" in Power BI, and when are they needed?

Gateways are connectors that allow secure data transfer between **on-premises data sources** (like SQL Server, Oracle, SAP) and **Power BI Service**.

They are needed when reports/dashboards in the cloud must access on-premises data that isn't directly available online.

14. How would you convince a company to adopt Power BI? (ROI argument)

- **Cost-effective:** Lower license costs compared to other BI tools.
 - **Faster insights:** Interactive dashboards reduce reporting time.
 - **Productivity boost:** Non-technical staff can create reports easily.
 - **Scalability:** Integrates with existing Microsoft products, minimizing training costs.
- Overall, it delivers **high ROI** by saving time, improving decision-making, and reducing IT reporting workload.

15. What security features does Power BI offer for sensitive data?

- **Row-Level Security (RLS):** Restricts data access per user role.
- **Data Encryption:** Both at rest and in transit.
- **Azure Active Directory (AAD) integration:** For authentication and access control.
- **Sensitivity Labels:** Classify and protect data in reports.
- **Audit Logs:** Track usage and data access.