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

**Power BI** is a business analytics tool by Microsoft that allows users to visualize data, create reports, and make data-driven decisions.

**Three main components:**

1. **Power BI Desktop** – A Windows application for creating reports.
2. **Power BI Service** – A cloud platform for sharing and collaborating on reports.
3. **Power BI Mobile** – A mobile app for accessing reports on the go

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

1. **Real-time sales monitoring** (by region, product, or sales rep).
2. **Financial performance tracking** (expenses, revenue, and KPIs).

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

1. Visit <https://powerbi.microsoft.com>
2. Click on "Download" → Select **Power BI Desktop**.
3. Run the installer and follow the installation instructions.

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

| **Feature** | **Power BI Desktop** | **Power BI Service** |
| --- | --- | --- |
| Environment | Local application | Cloud-based platform |
| Usage | Data modeling & report design | Sharing, scheduling, collaboration |
| Auto-refresh | Manual only | Supports automatic refresh |
| Cost | Free | Free & Paid (Pro, Premium) |

**5. What is the file extension used by a Power BI project?**

.pbix – This file contains data models, queries, and visualizations.

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

**Power Query** is a data transformation tool within Power BI used to:

* Connect to various data sources
* Clean and reshape data
* Combine multiple datasets before loading into the report

**7. Why do companies prefer Power BI over Excel for reporting?**

* Interactive dashboards
* Automated data refresh
* Integration with multiple data sources (SQL, Azure, APIs, etc.)
* Advanced visualization
* Role-based access and sharing
* Scalable across departments and teams

**8. Name one limitation of the free version of Power BI.**

The **free version doesn't support scheduled auto-refresh** in the cloud. Reports must be refreshed manually.

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

A **published report** is a report created in Power BI Desktop and then uploaded to the Power BI cloud service to be shared with others.

**10. How does Power BI Mobile enhance accessibility?**

Power BI Mobile provides:

* Access to dashboards and reports on smartphones/tablets
* Real-time alerts and push notifications
* Offline report viewing

**11. Compare Power BI with Tableau – pros and cons.**

| **Feature** | **Power BI** | **Tableau** |
| --- | --- | --- |
| Cost | More affordable, even free | Expensive licenses |
| Ease of use | Easier for beginners | Requires more training |
| Speed | Slower with very large data | High performance |
| Custom visuals | Decent | Very flexible and advanced |
| MS Integration | Excellent (Excel, Azure, Teams) | Limited |

**12. How does Power BI integrate with Azure services?**

* Connects to **Azure SQL Database**, **Azure Synapse**, **Blob Storage**
* Uses **Azure Active Directory (AAD)** for secure sign-in
* Integrates with **Azure Stream Analytics** for real-time data

**13. What are "Gateways" in Power BI and when are they needed?**

**Gateways** are bridge services that connect on-premises data sources to the Power BI cloud. They're required when:

* You use local SQL Servers, Excel, or file systems
* You want to enable auto-refresh from on-prem sources

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

Power BI offers a **high ROI** by:

* Automating manual reporting
* Reducing time to insight
* Enabling better, faster decision-making
* Being cost-effective compared to enterprise BI tools
* Offering immediate visual feedback

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

* **Row-Level Security (RLS)** – restricts data access by user roles
* **Azure Active Directory** – secure authentication
* **Data Loss Prevention (DLP)** – prevents data leaks
* **Audit logs & usage tracking**
* **Encryption at rest and in transit**