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

PowerBI is the analytics tool that helps to visualize data, show key features, make conclusions and decisions according to it. It consists of 3 components: PowerBI desktop for creating reports and data models, PowerBI Service which is a cloud platform for publishing, sharing and collaborating reports and PowerBI Mobile for mobile usage that works on IOS and Android platforms

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

The first one is usage for sales department. It is possible to see the most and the least sold product, the best sales manager, the product that brings the most profit, sales over time and etc.

The second case could be usage for inventory. It is possible to Avoid stockouts or overstock situations, optimize supplier relationships and delivery schedules.

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

It is possible to download Power BI in Microsoft store in PC that works on Windows or in the official site of Microsoft power bi.

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

Power BI Desktop **is** A **free Windows application** installed on your computer which is used for Data import and transformation, Building data models and Designing reports and dashboards while power bi service is used for **Publishing**, **sharing**, and **collaborating** on reports, Scheduling data refreshes and Setting up dashboards, alerts, and role-based security. Powerbi desktop does not internet to work and has advanced DAX modeling. Power bi has real time updates and has access to reports on web or mobile devices

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

It use .pbix, .pbit and .pbids extensions

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

Power Query is a **data connection and transformation engine** built into Power BI (also used in Excel).
It allows users to Connect to various data sources, Clean, reshape, and combine data, Load the transformed data into Power BI for analysis

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

A business might prefer **Power BI over Excel** for reporting because Power BI offers **more advanced, scalable, and interactive** reporting capabilities — especially when working with **large, complex, or real-time data**.

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

You cannot share reports or dashboards with others in the Power BI Service (cloud). You can create full reports in Power BI Desktop. You can publish them to the Power BI Service (cloud). But you cannot share those reports with colleagues or teams unless you have a Power BI Pro license.

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

A "published report" in Power BI Service refers to a Power BI report that has been created in Power BI Desktop and then uploaded (published) to the Power BI cloud platform (app.powerbi.com).

10. How does Power BI Mobile enhance accessibility?

Power BI Mobile enhances accessibility by allowing users to view, interact with, and monitor dashboards and reports anytime, anywhere, directly from their mobile devices.

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

**Pros:**

* Easy to learn (especially for Excel users)

* Affordable pricing

* Seamless Microsoft ecosystem integration

* Strong data modeling and transformation tools

* Built-in AI features (Q&A, insights)

**Cons:**

* Slightly less flexible visuals than Tableau

* May lag with very large real-time datasets

* Limited cross-platform functionality for Mac

12. Explain how Power BI integrates with Azure services.

Power BI's tight integration with Azure provides Seamless data access, Real-time analytics, Advanced AI/ML capabilities, Enterprise-grade security and scalability

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

A Power BI gateway is software installed on an on-premises server or computer that enables cloud-based Power BI reports to access local data sources, such as:

SQL Server, Oracle, Excel files on a local network ,SAP, IBM DB2, and others

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

Drastically lower licensing and infrastructure costs.

Saves hours per week per analyst/manager = hundreds of hours/year = $$$ in labor savings.

Reduces email back-and-forth and version control problems → streamlined workflow.

Reduces risk of data breaches and compliance violations.

Fosters data-driven decisions and boosts performance across departments.

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

1. Azure Active Directory (AAD) Integration

Manages user authentication and single sign-on (SSO).

Supports multi-factor authentication (MFA).

Enables enterprise-wide identity management.

2. Row-Level Security (RLS)

Restricts data access based on user roles.

Each user sees only the data they are authorized to view.

Applied within the data model using DAX filters.

3. Data Encryption

Data at rest is encrypted using Microsoft-managed keys or customer-managed keys (CMK).

Data in transit is secured with HTTPS/TLS encryption.

## 4. Microsoft Information Protection (MIP) & Sensitivity Labels

Apply sensitivity labels (e.g., Confidential, Internal) to reports and dashboards.

Labels enforce restrictions like sharing, printing, or exporting.

Integrates with Microsoft Purview for data governance.

## 5. Access Control and Permissions

Workspace-level security: define Admin, Member, Contributor, or Viewer roles.

Share reports only with authorized users or groups.

Audit logs to monitor access and activity.

## 6. Service Principals and Managed Identities

Used in enterprise automation and API access.

Grant non-user apps secure access to datasets and services.

## 7. Data Loss Prevention (DLP) Policies

Detect and prevent sharing of sensitive information.

Alerts admins when users try to export or share restricted data.

## 8. Power BI Gateway Security

Secure data transmission from on-premises sources to Power BI Service.

Uses Azure Service Bus for encrypted communication.