Lesson -1

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

Answer:

Power BI is Microsoft's tool for data visualization and business intelligence. In simple terms, it helps people and businesses turn their raw data into clear, interactive charts and dashboards to spot trends and make better decisions.

It's built around three main parts:

1. Power BI Desktop: A free Windows app where you build reports—you connect to data, clean it up, and design your visuals.
2. Power BI Service: The online platform where you share those reports with others, collaborate, and set up automatic data updates.
3. Power BI Mobile Apps: Apps for your phone or tablet so you can view your dashboards and reports anywhere.

Question 2: Name two business use cases for Power BI dashboards.?

1. Sales Performance Tracking

What it does: A dashboard that gives the sales team and managers a real-time look at how they are performing against their goals.

What you'd see on it:

- A summary of total revenue vs. the monthly or quarterly target.
- A breakdown of sales by region, product, or salesperson.
- Trends showing whether sales are going up or down over time.
- A list of the top-performing products or services.

2. Marketing Campaign Analysis

What it does: A dashboard that measures the effectiveness of marketing efforts across different channels like social media, email, and online ads.

What you'd see on it:

- Key metrics like website traffic, conversion rates, and cost per acquisition.
- A comparison of how each marketing channel (e.g., Facebook, Google Ads, email) is performing.
- Charts showing which campaigns generated the most leads or sales.

Question 3: How do you download and install Power BI Desktop?

Download Power BI Desktop:

1. Go to the official Power BI website.
2. Click the "Download free" button.
3. Choose the version (Microsoft Store is easiest).
4. Run the installer and follow the steps.
5. Open it from your Start Menu. Done.

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

Power BI Desktop:

- For building.
- A free Windows app.
- You connect to data, build reports, and create data models.

Power BI Service:

- For sharing.
- A cloud-based website.
- You publish, share, and view reports online.

Question 5: **What file extension does a Power BI project use?**

.pbix

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

Power Query's Role:

It's the data preparation tool inside Power BI. You use it to:

- Connect to data sources.
- Clean and transform messy data.
- Shape data (e.g., rename columns, filter rows, merge tables).

It gets your data ready for analysis *before* you build visuals.

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

Power BI is preferred for:

- Big Data: Handles millions of rows smoothly.
- Interactivity: Creates clickable, self-service dashboards.
- Automation: Connects directly to data sources for live/refreshed reports.
- Sharing: Publishes securely to the web/cloud for easy team access.

Question 8 : Describe one limitation of the free version of Power BI

Limited Sharing: You can't share reports directly with others. The free version is for personal use only. To publish and share dashboards for your team to view, you need a paid Pro or Premium license.

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

A published report is a Power BI report (.pbix file) that you've uploaded from Power BI Desktop to the online Power BI Service.

Once published, it becomes a shared, web-based report that your team can:

- View in any browser.
- Interact with (filter, slice, drill down).
- Access from anywhere.

Question 10 : How does Power Bi Mobile enhance accessibility ?

It lets users view and interact with their company's dashboards and reports from their phone or tablet anywhere, anytime.

Question 11: Compare Power Bi with Tableau - pros and cons.

Power BI (Pros):

- Cost: Much cheaper, especially for Microsoft users.
- Integration: Seamless with other Microsoft products (Excel, Azure).
- Ease of Use: Generally easier to learn.

Power BI (Cons):

- Advanced Features: Can be less flexible for highly complex visualizations.

Tableau (Pros):

- Visuals: Superior for creating advanced, custom visualizations.
- Handling Data: Excellent at processing very large, complex datasets.

Tableau (Cons):

- Cost: Significantly more expensive.
- Learning Curve: Steeper and harder to master.

Question 12 : Explain how Power BI integrates with Azure services.

Power BI connects deeply with Azure:

- Data Sources: Pulls data directly from Azure services like Azure SQL Database, Azure Synapse Analytics, and Azure Data Lake Storage.
- AI: Uses Azure Machine Learning models to add predictive analytics to reports.
- Governance: Manages security and access through Azure Active Directory.

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

Gateways act as a secure bridge between your on-premises data (data on your company's local servers) and the cloud-based Power BI service.

They are needed when:

- Your data is stored locally (e.g., in a SQL Server on your office network).
- You need to refresh a published Power BI report so it shows the latest data from that local source.

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

Adopting Power BI saves time and money by turning data into clear, actionable insights faster. It reduces manual report-building, eliminates errors from outdated spreadsheets, and helps everyone make smarter decisions quickly. This leads to lower costs, increased revenue, and a strong competitive advantage.

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

Power BI protects data with:

- Row-Level Security (RLS): Restricts data access for users within the same report.
- Data Encryption: Encrypts data at rest and in transit.
- Azure Active Directory Integration: Controls user authentication and access.
- Audit Logs & Compliance: Tracks user activity and meets industry standards (e.g., GDPR, HIPAA).