POWER BI

QUESTION 1 **What is Power BI and why is it used in businesses?**

ANSWER Power BI is a Business Intelligence (BI) tool developed by Microsoft.

It helps businesses analyze data and create interactive reports and dashboards.

Power BI converts raw data into meaningful insights using charts, graphs, and dashboards.

1) Why is Power BI used in businesses?

Data Visualization

Bar charts

Pie charts

Line graphs

KPI cards

2) Decision Making

Total Sales

Profit

Customer Growth

Monthly Performance

3) Connects to Multiple Data Sources

Excel

SQL Database

Cloud services

			APIs					
			4) Real-Time Monitoring					
			Daily sales					
			Inventory levels					
			Website traffic					
			5) KPI Tracking					
			Revenue Growth					
			Profit Margin					
			Customer Retention					

QUESTION 2			Name and explain the three main components of Power BI

ANSWER

The three main components of Power BI are:

Power BI Desktop

This is the main development tool.
 It is a Windows application used to:
Connect to data sources (Excel, SQL, etc.)
Clean and transform data (Power Query)
Create data models (relationships between tables)
Build reports and dashboards

Power BI Service (PowerBI.com)

This is the cloud-based online platform provided by Microsoft.
Publish reports created in Desktop
Share dashboards with others
Schedule data refresh
Collaborate with team members

Power BI Mobile

This is the mobile application.
View dashboards on phone/tablet
Monitor KPIs in real time
Get alerts

QUESTION 3		**Explain the Power BI workflow**	

ANSWER

1) Data Collection (Get Data)

First, we collect data from different sources:

Excel
SQL Database
CSV files
Cloud services

2) Data Transformation (Power Query – ETL Process)

After loading data, we clean and transform it.

Removing duplicates
Handling missing values
Changing data types
Renaming columns
Creating new columns

3) Data Modeling

Now we create relationships between tables.

For example:

			Sales table			
			Customer table			
			Product table			
			4) Data Visualization (Report Creation)			
			Now we design reports using:			
			Bar charts			
			Line charts			
			Pie charts			
			KPI cards			
			Tables			
			5) Publish to Power BI Service			
			After creating reports in Desktop:			
			Click Publish			
			Upload to Power BI Service (cloud platform by Microsoft)			

QUESTION 4 | List any four data cleaning tasks that can be performed in Power Query

ANSWER | **1) Remove Duplicates**

Removes repeated records from the dataset.

2) Handle Missing Values (Null Values)

Replace null values
Remove rows with nulls
Fill values (Fill Down / Fill Up)

3) Change Data Types

 Convert columns into proper formats like:

Text
Number
Date

4) Rename and Clean Column Names

Rename columns
Remove extra spaces
Make names standardized

| QUESTION 5 | | | **Write step by step instructions to load the above dataset.** | | | |

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ANSWER

1) Open Power BI Desktop

Launch Power BI Desktop on your system.

Click on Home tab.

2) Click "Get Data"

Go to Home → Get Data

Choose your data source:

Excel
Text/CSV
SQL Server
Other sources

3) Select the File

Browse your file location.
Select the dataset file.
Click Open.

4) Navigator Window

			A Navigator window will appear.		
			Select the sheet or table you want to load.		
			Click:		
			Transform Data (recommended) OR		
			Load (if no cleaning required)		
			5: Clean Data in Power Query Editor		
			In Power Query Editor you can:		
			Remove duplicates		
			Handle null values		
			Change data types		
			Rename columns		
			Remove unnecessary columns		
			6: Data Loaded into Model		
			Now:		
			Data will load into the Data Model.		
			You can see tables in the Fields panel.		

QUESTION 6			Define Data View, Report View, and Model View. Explain the purpose of each view.
ANSWER			1) Data View
			Data View shows the table data in rows and columns format (like Excel).
			Check column values
			Create calculated columns
			Verify data after cleaning
			Analyze data at row level
			2) Report View
			Report View is where you create charts, graphs, and dashboards.
			Create visualizations (bar chart, pie chart, line chart, etc.)
			Build dashboards
			Add slicers and filters
			Design report layout
			3) Model View
			Model View shows the relationships between tables.
			Create relationships (Primary Key – Foreign Key)
			Manage data model
			View table structure
			Understand how tables connect

QUESTION 7			**Discuss the different data sources that Power BI supports**
ANSWER			**1) File-Based Data Sources**
			These are local or stored files.
			Examples:
			Excel (.xlsx)
			CSV (Comma Separated Values)
			Text files
			XML
			JSON
			PDF
			2) Database Sources
			Power BI can connect to relational and non-relational databases.
			Common Databases:
			Oracle
			MySQL
			SQL Server
			PostgreSQL
			Access
			3) Cloud-Based Data Sources

			Power BI can connect to online/cloud platforms.		
			Examples:		
			Azure SQL Database		
			SharePoint		
			Salesforce		
			OneDrive		
			Google Analytics		
			4) Web & API Sources		
			Power BI can pull data from:		
			Web URLs		
			REST APIs		
			OData feeds		
			Other Sources		
			Power BI datasets		
			Python scripts		
			Analysis Services		
			R scripts		
			Azure Data Lake		

QUESTION 8			Split Owner Name to create two new columns as First Name and Last Name
ANSWER			owner name
			mitesh sonawane
			vicky shimpi
			We want to split it into:
			First Name
			Last Name
			Click Transform Data to open Power Query Editor.
			Select the column Owner Name.
			Go to the Transform tab.
			Click Split Column → Choose By Delimiter.
			Select Space as the delimiter.
			Choose Split at Left-most delimiter.
			Click OK.