1. What do you mean by BI? Explain.

Ans.BI stands for **Business Intelligence**. It refers to the technologies, strategies, and practices used by organizations to collect, analyze, and present business data. The goal of BI is to help companies make data-driven decisions by transforming raw data into meaningful insights.

**Key Components of BI:**

1. **Data Collection** – Gathering data from various sources (databases, CRM systems, spreadsheets, etc.).
2. **Data Warehousing** – Storing large amounts of structured data in a central repository.
3. **Data Analysis** – Using analytical tools to find trends, patterns, and insights.
4. **Data Visualization** – Presenting insights through dashboards, charts, and reports for easy understanding.
5. **Decision-Making** – Helping businesses make informed strategic and operational decisions.

2.Explain Descriptive analytics?

Ans: **Descriptive analytics** is the process of analysing historical data to identify patterns, trends, and insights. It helps organizations understand what has happened in the past by summarizing raw data into meaningful information. This is often done using data visualization techniques, such as charts, graphs, and dashboards, as well as statistical measures like averages, percentages, and frequency distributions.

**Key Features of Descriptive Analytics:**

1. **Summarizes Past Data:** Provides insights into historical performance.
2. **Uses Data Aggregation & Visualization:** Employs charts, graphs, and dashboards for easy interpretation.
3. **Focuses on Trends & Patterns:** Helps identify key trends from large datasets.
4. **No Predictions or Cause Analysis:** It does not explain why things happened or predict future outcomes.

**3.** **Explain Predictive analytics?**

**Predictive analytics is the practice of using historical data, statistical algorithms, and machine learning techniques to identify patterns and predict future outcomes. It helps organizations make informed decisions by forecasting trends, behaviors, and potential risks.**

**How Predictive Analytics Works**

1. **Data Collection – Gathering structured and unstructured data from various sources.**
2. **Data Processing – Cleaning and transforming data to remove inconsistencies.**
3. **Model Building – Using statistical models, machine learning algorithms, or AI techniques to find patterns.**
4. **Prediction & Deployment – Applying the model to new data to make predictions and integrate results into decision-making.**

**4.** **Explain perspective analytics?**

**Ans: Perspective Analytics (also called *Prescriptive Analytics*) is the advanced level of data analysis that not only predicts future outcomes but also provides recommendations on what actions to take to achieve desired results. It goes beyond descriptive (what happened?), diagnostic (why did it happen?), and predictive analytics (what will happen?) by answering the question:**

**➡ "What should be done next?"**

**Key Features of Perspective Analytics**

1. **Action-Oriented – Suggests optimal decisions or strategies based on data.**
2. **Uses Advanced Technologies – Incorporates machine learning, artificial intelligence (AI), and optimization algorithms.**
3. **Scenario Analysis – Evaluates different possible outcomes and recommends the best course of action.**
4. **Real-Time Decision Making – Helps businesses respond to changing conditions instantly.**
5. **Risk Management – Assesses risks and provides strategies to mitigate them.**

**5.** **Write five real-life questions that PowerBi can solve?**

**Ans:** **Power BI is a powerful data analytics tool that helps businesses make informed decisions. Here are five real-life questions Power BI can solve:**

1. **Sales Performance Analysis  
   📊 *Which products generated the highest revenue last quarter, and what factors contributed to their success?***
2. **Customer Behavior Insights  
   🛍️ *What are the buying patterns of customers based on demographics, location, and time of purchase?***
3. **Marketing Effectiveness  
   📢 *Which marketing campaigns provided the highest ROI, and how can we optimize future campaigns?***
4. **Operational Efficiency  
   🚚 *How can we reduce supply chain delays by analyzing vendor performance and inventory levels?***
5. **Financial Forecasting  
   💰 *What will our cash flow look like in the next six months based on current revenue and expense trends?***