

Module 4

Sr. No.	Question	Marks
1	Define Matplotlib and illustrate its application with an example.	2
2	Identify the applications of a Line Plot and analyze its use in data visualization.	2
3	Discuss the scatter() method in Python and demonstrate its usage with an example.	2
4	Name two common chart types used for categorical data representation.	2
5	Describe the concept of a Slicer in Power BI and explain its role in interactive data analysis.	2
6	What are the main components of Tableau's user interface?	2
7	Discuss the key elements of storytelling in Data Visualization and analyze their importance.	2
8	Describe Data Visualization and illustrate its significance with an example.	2
9	Name two benefits of using interactive dashboards.	2
10	Mention two best practices for choosing appropriate chart types in data visualization.	2
11	List two best practices for visual storytelling in data visualization.	2
12	Discuss the Cons of Power BI with relevant examples.	5
13	Discuss the role of interactive dashboards in business intelligence and decision-making.	5
14	Explain the working of the Visualization Process and illustrate its significance in data analysis.	5
15	Describe three key best practices for creating effective visual stories in Tableau and Power BI.	5
16	Discuss the Cons of Tableau with real-world use cases.	5
17	Explain various Data Visualization techniques and demonstrate their applications in different scenarios.	5
18	Describe the key features of Tableau in detail and analyze how they contribute to effective data visualization.	5
19	What are the essential steps to create a compelling data visualization in Tableau or Power BI?	5
20	What are interactive dashboards, and how do they enhance data analysis?	5
21	Compare Tableau and Power BI, highlighting their differences in terms of performance, cost, ease of use, and integration.	5
22	Differentiate between Tableau and Power BI in terms of their user interface and features.	5
23	Describe the key features of Power BI in detail and analyze its advantages for business intelligence.	5

Module 5

Sr. No.	Question	Marks
1	What is the impact of document length on TF-IDF scores?	2
2	Define Corpus in the context of Natural Language Processing (NLP) and describe its significance in text analytics.	2
3	Compare Sentiment Analysis and Semantic Analysis by highlighting their key differences, applications, and impact.	2
4	Write about the importance of Text Analysis.	2
5	How can stemming and lemmatization improve TF-IDF results?	2
6	Explain the concept of Topic Modeling and illustrate its applications in real-world scenarios.	2
7	How does TF-IDF handle stop words?	2
8	Discuss Text Analytics and analyze its importance in extracting meaningful insights from unstructured data.	2
9	Describe the components of Time Series Analysis and explain their relevance in forecasting.	2
10	Explain Inverse Document Frequency (IDF) in simple terms and demonstrate its role in text analysis.	2
11	Explain why rare words get higher TF-IDF scores.	2
12	Interpret Time Series Data and analyze its significance in analytics by examining its key characteristics.	5
13	Differentiate between Manual and Automatic Document Classification and evaluate their advantages and limitations.	5
14	Why does TF-IDF fail to capture the meaning of words? Suggest an alternative approach.	5
15	If a document contains 100 words and the term "AI" appears 5 times, calculate the TF value for "AI."	5
16	Describe Sentiment Analysis and analyze its importance in extracting insights from text data.	5
17	How can TF-IDF be used for document similarity? Provide an example.	5
18	Illustrate a comprehensive explanation of Time Series Analysis and demonstrate its application with a real-world example.	5
19	Given three documents: Doc 1: "Data Science is amazing" Doc 2: "Machine Learning and Data Science" Doc 3: "Data Science and Artificial Intelligence" Calculate the DF (Document Frequency) for the term "Science."	5
20	Discuss the advantages and limitations of TF-IDF in text analysis and analyze its effectiveness in different use cases.	5
21	Consider three documents: Doc 1: "Big Data and AI are transforming industries." Doc 2: "AI and Machine Learning drive innovation." Doc 3: "Deep Learning is a subset of AI." Calculate the document frequency (DF) for the term "AI".	5

Module 6

Sr. No.	Question	Marks
1	Explain Data Analytics Thinking and evaluate its importance in data-driven decision-making.	2
2	Define recommender systems and describe their purpose in personalizing user experiences.	2
3	Name two real-world companies that successfully use data science for business growth.	2
4	What is the role of recommender systems in business applications?	2
5	Classify the types of Collaborative Filtering used in recommendation systems and compare their advantages and limitations.	2
6	Define the application of Data Science in Google and YouTube by analyzing how these platforms utilize data-driven techniques.	2
7	Discuss the role of Data Analytics in optimizing business processes and assess how it enhances efficiency and decision-making.	2
8	Analyze how Data Science provides a competitive advantage and discuss its impact on business growth.	2
9	Describe Data Science and analyze its role in enabling businesses to adopt an analytical mindset.	2
10	Discuss the competitive advantage of Data Science and assess how organizations can leverage it to gain an edge in their industries with examples.	5
11	Describe a case where data science transformed a company's operations and discuss the impact.	5
12	Illustrate the life cycle of a recommendation system and demonstrate its stages with practical applications.	5
13	Identify trends, patterns, and correlations in ride demand and pricing dynamics affecting Uber's operations. Apply visualization techniques to illustrate relationships between different variables and their impact.	5
14	How do recommender systems work, and what are the two main types? Provide an example for each.	5
15	Explain the key steps in solving a business problem using data science.	5
16	Describe recommendation systems and analyze their working with a detailed example.	5
17	Discuss the principles and algorithms used in developing recommender systems. Compare and contrast collaborative filtering and content-based approaches.	5
18	Describe the key principles and techniques of predictive analytics. Analyze how it enables businesses to forecast trends, anticipate customer behavior, and optimize operations.	5
19	Illustrate real-world business problems and demonstrate how Data Science provides effective solutions with examples.	5