


RAN-2611000502022001

M.Sc. (Computer Application) (Sem.- II) Examination February - 2026
Data Analytics and Visualization (TH) (Paper - 202)

[Total Marks: 25

સૂચના : / Instructions

- (1) ઉપરોક્ત દશવિધ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
 Fill up strictly the above details on your answer book

Seat No.:

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Student's Signature

Q.I.
Answer following (Select most appropriate choice) (Any FOUR)
[04]

- In Tableau Public, which feature allows users to connect directly to multiple data sources such as Excel, CSV, and databases within the same workbook?
 - Data Blending
 - Data Connection Pane
 - Worksheet Shelf
 - Marks Card
- Which Tableau component is used to create a new field by applying formulas or expressions to existing data fields?
 - Parameter
 - Filter
 - Calculated Field
 - Hierarchy
- When visualizing geographical data such as country-wise sales, which chart type in Tableau is most appropriate?
 - Line Chart
 - Pie Chart
 - Bar Chart
 - Map Chart
- Which feature enables user-driven interactivity in Tableau dashboards by allowing viewers to change values dynamically?
 - Filters
 - Parameters
 - Calculated Fields
 - Tooltips
- In a data storytelling dashboard, what is the primary purpose of combining Tableau and Python?
 - To replace Tableau visualizations
 - To perform complex data preprocessing and comparative analysis
 - To store large datasets
 - To design static dashboards
- During a capstone project, which of the following is the correct sequence of steps?
 - Visualization → Data Collection → Analysis → Report
 - Data Collection → Data Cleaning → Analysis → Visualization → Report
 - Analysis → Data Collection → Visualization → Cleaning → Report
 - Data Cleaning → Data Collection → Visualization → Analysis → Report

[B] Answer following in short [Any four]
[04]

- Explain the different types of plots available in Matplotlib and mention any two use cases.
- What is the role of layout, styling, and exporting in Matplotlib visualizations?
- Describe Seaborn boxplots and heatmaps. How are they useful for statistical analysis?

4. What types of interactive charts can be created using Plotly? Explain any two.
5. Explain the key features of Streamlit used for building interactive dashboards.
6. How can Streamlit dashboards be hosted and shared with users?

Q.2. [A] Explain how Python can be used to connect to an SQLite database using the sqlite3 module. **[05]**

OR

[A] Describe the process of connecting to a MongoDB database using pymongo.

[B] How can Pandas be used to read data from SQL and NoSQL databases? **[04]**

Q.3. Write short-notes on following: (Any Two) **[08]**

1. Explain the concept of multi-indexing in Pandas and its applications in handling hierarchical data.
 2. Write a short note on merging, pivoting, and reshaping data using Pandas.
 3. Describe the GroupBy operation in Pandas and explain how aggregation functions are used for data summarization.
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