**SHRI RAMSWAROOP MEMORIAL UNIVERSITY**

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| **PROBLEM SET – II** | | | |
| **Session** | **: 2025-26(Odd Sem)** | **Semester** | **: III** |
| **Course** | **: B.tech** | **Subject Code** | **: UCS 3804** |
| **Branch** | **: DS + AI** | **Subject Name** | **: Data Analytics & reporting**  **L T P C**  **2 1 0 3** |
| **Group** | **: ALL** | **Name of Faculty Member** | **: Mr. Sukhmander singh** |
| **Unit** | **: II** | **Topics Covered** | **: All Topics** |
| 1. **What is the purpose of the Pandas library in Python? Mention its key features.** 2. **Explain the difference between a Pandas DataFrame and a Series with suitable examples.** 3. **How can you install Pandas in a Python environment? Write the command used for installation.** 4. **Write Python code to load data from a CSV file and an Excel file into Pandas DataFrames.** 5. **How do you select specific rows and columns in a Pandas DataFrame?** 6. **What techniques can be used in Pandas to clean data and handle missing values?** 7. **How do you sort and group data in a DataFrame? Explain with examples.** 8. **Explain how to merge and join DataFrames using Pandas. Describe inner, outer, left, and right joins.** 9. **What are pivot tables in Pandas? How are they useful in summarizing data?** 10. **How can you create and customize basic data visualizations like line plots and bar charts using Pandas?**     **Supplementary Questions:**   1. **Write a Python script that loads a dataset, removes missing values, filters rows based on a condition, and then creates a bar chart using Pandas.** 2. **Explain the complete process of preparing raw data for analysis using Pandas — including loading, cleaning, transforming, and visualizing the data.**   **TEXTBOOKS:**   1. **Data Science and Analytics** by V.K. Jain 2. IBM Courseware   **REFERENCE BOOKS:**   1. Data Analytics Made Accessible by Anil Maheshwari   **(Signature of the Faculty Member with date) (Signature of the Dean with date)** | | | |