

SHRI RAMSWAROOP MEMORIAL UNIVERSITY

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
Group	: ALL	Name of Faculty Member	: Mr. Sukhmander singh, Ms. Deepika
Unit	: II	Topics Covered	: All Topics

1. What is the purpose of the Pandas library in Python? List its key features.
2. Differentiate between a Pandas DataFrame and a Series. Give suitable examples.
3. Which command is used to install Pandas in a Python environment? Recall the step.
4. Write Python code to load data from a CSV file and an Excel file into Pandas DataFrames.
5. How can you select specific rows and columns in a Pandas DataFrame?
6. Identify techniques used in Pandas to clean data and handle missing values.
7. Explain how to sort and group data in a DataFrame with examples.
8. Define merge and join operations in Pandas. List the differences between inner, outer, left, and right joins.
9. What are pivot tables in Pandas? Describe how they help in summarizing data.
10. Show how to 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)