**SHRI RAMSWAROOP MEMORIAL UNIVERSITY**

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| **PROBLEM SET – III** | | | |
| **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,**  **Ms. Deepika** |
| **Unit** | **: III** | **Topics Covered** | **: All Topics** |
| 1. **What is Matplotlib, and why is it widely used for data visualization in Python?** 2. **How do you create line graphs, bar charts, and scatter plots using Matplotlib? Provide basic code examples.** 3. **Explain how subplots are created in Matplotlib and how they are useful in presenting multiple visualizations in a single figure.** 4. **Describe how to add titles, labels, legends, and annotations in Matplotlib to enhance plot readability.** 5. **What are the basic Excel formulas used for data analysis? Explain with examples (e.g., SUM, AVERAGE, IF).** 6. **How can you apply sorting and filtering to Excel datasets for better data exploration?** 7. **Explain the use of conditional formatting in Excel. How does it help in data interpretation?** 8. **What are pivot tables in Excel, and how do they assist in summarizing large datasets?** 9. **Describe how to create basic charts in Excel (bar, line, pie) and when to use each type.** 10. **How can visualizations created in Python using Matplotlib be exported or embedded into Excel for reporting purposes?**     **Supplementary Questions:**   1. **Write a Python program that creates a bar chart using Matplotlib, saves it as an image, and inserts it into an Excel file using any suitable library.** 2. **Explain how integrating Python and Excel enhances data reporting workflows in real-world business scenarios. Give a practical example.**   **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)** | | | |