SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

23MCT303 – DATA ANALYTICS IN AUTOMATION SYSTEM

QUESTION BANK

UNIT II: DATA PREPARATION AND VISUALISATION (CO2)

Short Answer Questions (2 Marks)

Q.No	Question	Bloom's Level	CO
1	What is data acquisition in automation systems?	Remember	CO2
2	List any four sources of data in automation systems.	Remember	CO2
3	Name any four data pre-processing techniques for sensor data.	Remember	CO2
4	Define data visualization and state its purpose in automation.	Understand	CO2
5	Mention any two advantages of using Tableau for data visualization.	Understand	CO2
6	What are log files in automation systems? Give one example.	Remember	CO2
7	State the difference between structured and time-series sensor data.	Understand	CO2
8	List any four types of charts available in Tableau.	Remember	CO2
9	Why is handling missing values important in sensor data pre-processing?	Understand	CO2
10	Name any two techniques for outlier detection in automation sensor data.	Remember	CO2

Long Answer Questions (13/14 Marks)

Q.No	Question	Bloom's Level	CO
1	Explain the complete process of data acquisition and storage for automation systems. Discuss challenges in handling sensor data and log files.	Apply/Analyze	CO2
2	Describe various data pre-processing techniques applicable to automation sensor data. Justify the need for each technique.	Apply/Analyze	CO2
3	Discuss the role of Tableau in visualization and data exploration. Explain at least six types of visualizations suitable for automation data.	Apply/Analyze	CO2
4	Design a data preparation pipeline for noisy sensor data containing missing values and outliers. Include justification for each step.	Analyze/Create	CO2
5	Explain how data visualization helps in understanding patterns in automation sensor data using Tableau features.	Apply/Analyze	CO2

Q.No	Question	Bloom's Level	CO
6	Discuss the importance of data pre-processing before visualization in automation systems. Provide examples of techniques.	Analyze	CO2
7	Describe the steps involved in creating an interactive dashboard in Tableau for time-series sensor data exploration.	Apply	CO2
8	Explain the challenges in handling high-velocity sensor data and how pre-processing and visualization address them.	Analyze	CO2
9	Compare different visualization tools and justify why Tableau is preferred for automation data exploration.	Evaluate	CO2
10	Design a complete data preparation and visualization workflow for automation log files and sensor data using Tableau.	Analyze/Create	CO2