SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

23MCT303 – DATA ANALYTICS IN AUTOMATION SYSTEM
QUESTION BANK

UNIT III: DATA ANALYTICS (CO3)

Short Answer Questions (2 Marks)

Q.No	Question	Bloom's Level	CO
1	Define linear regression and state its objective.	Remember	CO3
2	What is logistic regression? Mention its typical use.	Remember	CO3
3	List the main steps in building a decision tree.	Remember	CO3
4	State the difference between regression and classification.	Understand	CO3
5	Write the cost function for linear regression.	Remember	CO3
6	What is overfitting in decision trees?	Understand	CO3
7	Name any two splitting criteria used in decision trees.	Remember	CO3
8	Define basic data analysis and intermediate data analysis.	Understand	CO3
9	Mention the assumption of linear regression regarding residuals.	Remember	CO3
10	What is pruning in decision trees? State its purpose.	Understand	CO3

Long Answer Questions (13/14 Marks)

Q.No	Question	Bloom's Level	CO
1	Explain linear regression in detail including mathematical formulation, assumptions, and training process.	Apply/Analyze	CO3
2	Describe logistic regression algorithm, its sigmoid function, cost function, and applications in classification.	Apply/Analyze	CO3
3	Discuss the decision tree algorithm covering node splitting, pruning techniques, and handling overfitting.	Apply/Analyze	CO3
4	Compare linear regression, logistic regression, and decision trees in terms of use cases and strengths.	Analyze/Evaluate	CO3
5	Explain the concepts of basic and intermediate data analysis with examples of techniques covered in the syllabus.	Apply/Analyze	CO3
6	Describe the complete process of building and evaluating a decision tree model for a classification task.	Apply	CO3
7	Discuss the mathematical foundation and interpretation of coefficients in linear and logistic regression.	Analyze	CO3
8	Explain how decision trees handle both categorical and numerical data with illustrative examples.	Apply/Analyze	CO3
9	Compare the advantages and limitations of regression models versus tree-based models in data analytics.	Evaluate	CO3

Q.No	Question	Bloom's Level	CO
10	Describe a step-by-step approach to apply linear regression on a dataset, including evaluation metrics.	Apply/Create	CO3