



St. MARTIN'S ENGINEERING COLLEGE

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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE (AI & DS)

ASSIGNMENT-II

Course Name : **Machine Learning**

Course Code : **CS602PC**

Batch : **III**

Question Number	List of Questions	Bloom's Taxonomy Levels
1	Apply the k-NN algorithm to classify a new data point given a small dataset and justify your choice of 'k'.	BTL-3
2	Analyze how Independent Component Analysis (ICA) is used for blind source separation and discuss its advantages over PCA in certain scenarios.	BTL-4
3	Explain the basic working of a Genetic Algorithm. Describe the roles of genetic operators such as selection, crossover, and mutation.	BTL-2
4	Explain the core idea of Reinforcement Learning with the help of the "Getting Lost" example. Include agent-environment interaction and how learning is achieved through rewards	BTL-2
5	Given a Bayesian Network with nodes representing Weather, Sprinkler, Grass Wet, and Rain, apply conditional independence rules to identify dependencies and independencies among the variables.	BTL-3

Actual Date of Submission: **30.04.2025**

Last Date of Submission: **07.05.2025**