



St. MARTIN'S ENGINEERING COLLEGE

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

ASSIGNMENT-I

Course Name : **Machine Learning**

Course Code : **CS602PC**

Question Number	List of Questions	Bloom's Taxonomy Levels
1	Construct a simple artificial neural network with one input layer, one hidden layer, and one output layer. Describe how weights and biases are adjusted during training.	BTL-3
2	Implement the Candidate Elimination Algorithm for a simple training dataset consisting of fruits classified by color, size, and shape.	BTL-3
3	Analyze how the back-propagation algorithm updates weights when the learning rate is increased significantly.	BTL-4
4	Implement forward propagation for a multi-layer perceptron with 3 input neurons, 2 hidden neurons, and 1 output neuron. Given weights and biases, compute the output for the input vector [1, -1, 2].	BTL-3
5	Consider a small dataset with three attributes and a target label. Calculate the information gain for each attribute and identify the root node for a decision tree.	BTL-4

Date of Issue: **11.03.2025** Date of Submission: **15.03.2025**