SAHYADRI COLLEGE OF ENGINEERING & MANAGEMENT, MANGALURU

Department of CSE
Continuous Internal Evaluation - I

Date: 2025-11-27	Time: 3 Hrs	Max Marks: 100	Sem/Div: 7/A
Course: AIML	Code: 18CS71	Elective: NLP	

Note: Answer any ONE full question from each module.

Q.No	Question	Marks	CO	Level	Module
1	a. What is Data Structures? What are the various types of data structure? Explain.	8	N/A	L2	1
	b. Define pointers. List the advantages of pointers over arrays.	6	N/A	L2	1
	c. Write a program to insert an element in to binary tree.	5	N/A	L2	3
	OR				
2	a. Define data structures. List and explain the different operations that can be carried on arrays.	6	N/A	L2	1
	b. Define pointers. List the advantages of pointers over arrays.	6	N/A	L2	1
	c. Write a C function to write and erase a sparse matrix using single linked list	8	N/A	L2	3
3	a. Define Clustering. Explain K-means clustering algorithm with an example.	10	N/A	L2	2
	b. Explain layer abstraction in deep learning.	8	N/A	L2	2
	c. Construct a tree using the given tree traversals: In-order: GDHBAEICF Post-order: GHDBIEFCA	5	N/A	L2	3
	OR				
4	a. Consider the following dataset. Write a program to demonstrate the working of the decision tree based ID3 algorithm.	10	N/A	L2	2
	b. Consider the dataset spiral.txt (https://bit.ly/2Lm75Ly). The first two columns in the dataset corresponds to the co-ordinates of each data point. The third column corresponds to the actual cluster label. Compute the rand index for the following methods: ■■K – means Clustering ■■Single – link Hierarchical Clustering ■■Complete link hierarchical clustering. ■■Also visualize the dataset and which algorithm will be able to recover the true clusters.	10	N/A	L2	2
	c. What is a tree? With suitable example, define: i) Binary Tree ii) Level of the binary tree iii) Extended binary tree iv) Degree of the tree	8	N/A	L2	3