CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY

CHANDUBHAI S PATEL INSTITUTE OF TECHNOLOGY

K. D. PATEL DEPARTMENT OF INFORMATION TECHNOLOGY

Practical List

June-December 2022 (A.Y. 2022-23)

IT374 Artificial Intelligence **Semester: 5th IT**

Sr No	Aim	CO Mapping	Week No
1.	Presentation on AI Domains, Applications, Problems and its Explanation	1,2,3	1
2.	Implement Solution using BFS of 8 puzzle problem, Water Jug problem and one problem of your own choice using any programming language. Before implementing solution, analyse it with respect to problem characteristics [AI perspective] and solution space.	1,2	2
3.	Implement Solution using DFS of 8 puzzle problem, Water Jug problem and one problem of your own choice using any programming language. Before implementing solution, analyse it with respect to problem characteristics [AI perspective] and solution space	1,2	3
4.	Analyse, Design and implement Travelling Salesman Problem using Hill climbing, Steepest Ascent Hill climbing and Simulated Annealing Algorithm in Python. Differentiate all three approaches with conclusion	1,2	4,5
5.	Analyse, Design and implement above problem using A* and AO* approaches in Python	1,2,3	6,7,8
6.	Apply MINIMAX Algorithm to solve Tic-Tac-Toe game in python. Design your solution using alpha-beta pruning.	4,5	9
7.	Perform classification on Iris dataset using neural network tools such as WEKA, ORANGE, SKLearn	4,5	10,11
8.	Design a controller to determine wash time of a domestic washing machine. Assume the input is dirt and grease on cloths. Use three descriptors for input variables and five descriptors for output variables. Derive the set of rules for controller action and defuzzification. The design should be supported by the figure wherever possible. Show that if the cloths are solid to a larger degree the wash time will be more and vice versa	4,5	12,13
9.	Study **Tools for Neural Network Techniques such as Tensorflow**	5,6	14,15

	and Pytorch. Install and implement feed forward neural network on any data of your choice.		
10.	Perform Natural Language Processing Tasks [Text Reading, Text Analysis, Text Pre-processing, EDA, Stemming, Lemmatization] using NLTK using Python Programming	2,4	16,17
11.	Mini Project	1,6	