Exp. No.	Experiment Title	Marks
1	WAP to implement DFS and BFS for traversing a graph from source node (S) to goal node (G), where source node and goal node is given by the user as an input.	10
2	Design waterjug problem solver You are given two jugs with m litres and a n litre capacity. Both the jugs are initially empty. The jugs don't have markings to allow measuring smaller quantities. You have to use the jugs to measure d litres of water where d is less than n. You are given two jugs with m litres and a n litre capacity. Both the jugs are initially empty. The jugs don't have markings to allow measuring smaller quantities. You have to use the jugs to measure d litres of water where d is less than n. rubrics can explain the algorithm implemented with justification of choice of algorithm 5 marks user input can be dynamic 1 marks execution completes with proper output all cases 2 marks Lab discipline 2 marks conscious use of internet is allowed	10
3	Solve 8 puzzle problem using A* algorithm where initial state and Goal state will be given by the users. Those who solved water jug using A* have to apply AO* Rubrics: Proper Comments about the algorithm steps 4 marks dynamic input 3 marks No use of internet 3 marks Use of internet -3 marks	10
4	Implement the Fixed Increment Perceptron Learning algorithm as presented in the attachment. The training set for a 2- classificaiton problem is also attached (check Teams). Iterate the perceptron through the training set and obtain the weights.	10
5	Given a c++ code bnp, identify the algorithm implemented through the code. Also document the code	10
6a	Understand the project available on following link	

	Project Link: https://github.com/aharley/nn_vis Project by: https://adamharley.com/ Reference in case needed: https://www.youtube.com/watch?v=pj9-rr1wDhM		
6b	Part 2 Populate the table below to summarize your understanding of the project mentioned in part 1 | Layer	Task	Rationale
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				10
	How does the following hyper-parameters affect the network performance | Hyper-Parameter	One Line Definition	Effect on the CNN
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Stride		
Dilation Rate		
Type of pooling layer		
Kernel size		
padding				
	References: An Intuitive Explanation of Convolutional Neural Networks – the data science blog (ujjwalkarn.me) Gentle Dive into Math Behind Convolutional Neural Networks	by Piotr Skalski	Towards Data Science Intuitively Understanding Convolutions for Deep Learning	by Irhum Shafkat	Towards Data Science An Introduction to different Types of Convolutions in Deep Learning	by Paul-Louis Pröve	Towards Data Science	
	Rubrics: Part 1 (Indirect) Part 2 Layer Task – 5 points Hyper Parameter Task – 5 points	
7	Prepare your version of CNN following the steps in the link shared here. https://towardsdatascience.com/build-your-own-convolution-neural-network-in-5-mins-4217c2cf964f	

8	Design the Neural Network model for the project title submitted by you. Demonstrate "Over-fitting" and solve the same using "Dropout technique". Rubrics: Model Justification with respect to project domain - 5 marks Demonstration of over fitting and dropout technique - 5 marks	10
9	For your project definition demonstrate applicable task out of prediction and classification. Explain the entire work flow of your project through a single diagram. Project demonstration - 10 marks Work flow representation - 5 marks	15
10	For your project demonstrate the following; 1. need of optimizer - 5 marks 2. significance of your choice of optimizer - 5 marks 3. comparison of outcomes with and without optimization - 5 marks 4. Project Report including minimum (abstract, domain intro, data set description, implementation methodology with brief justification, results and discussion, future scope) - 10 marks	25
11a	Understanding the basics and IDE for Prolog Programming	10
11b	Implement any two of the following using Prolog: - Medical diagnosis of common cold and flu using symptom inputs - Demonstrating list in prolog - Monkey banana problem - Find the factorial of a given number	
12	WAP to design Tic Tac Toe games from O (Opponent) and X (Player) by using minimax algorithm.	10