Reg. No.												

Question Paper Code	12042

M.E. / M.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2023

First Semester

M.E. - Computer Science and Engineering

20PCSPW101 - ADVANCED MACHINE LEARNING WITH LABORATORY

(Regulations 2020)

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	Discuss briefly about the types of Machine Learning.	*2,K2,CO1*
2.	List the important objectives of machine learning.	*2,K1,CO1*
3.	Give description about Radial Basis Functions.	*2,K2,CO2*
4.	Elaborate the types of Back propagation.	*2,K2,CO2*
5.	Justify the need for learning in classification.	*2,K2,CO3*
6.	State the applications of K-Means Clustering algorithm.	*2,K1,CO3*
7.	What are the 3 ways of reducing the Dimensionality?	*2,K1,CO4*
8.	Enumerate the advantages of evolutionary algorithms.	*2,K2,CO4*
9.	State the uses of Reinforcement Learning.	*2,K2,CO5*
10.	Illustrate the method of Markov decision process.	*2,K3,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Explain in detail about the Perspectives and Issues in Machine Learning with a suitable problem.	*13,K2,CO1*
		OR	
	b)	Explain the Candidate-Elimination algorithm to output a description of the set of all Hypotheses consistent with the training examples.	*13,K2,CO1*
12.	a)	Explain Support Vector Machine in detail.	*13,K2,CO2*
		OR	
	b)	(i) State the important characteristics of Multi Layer Perceptron.	*7,K2,CO2*
		(ii) Explain the need of a Multilayer Perceptron.	*6,K2,CO2*
13.	a)	Explain in detail about Classification and Regression Trees. (CART)	*13,K3,CO3*

OR

b) Explain in detail about the K-Means algorithm with suitable example. *13,K3,CO3*

14. a) Explain in detail Principal Component Analysis for Dimension Reduction. *13,K3,CO4*

OR

b) (i) Explain Genetic Algorithms with relevant examples. *8,K3,CO4*
(ii) List the importance and Applications of Genetic Algorithms. *5,K3,CO4*

15. a) Explain the significance of Hidden Markov models in machine learning. *13,K2,CO5*

OR

b) Explain the Back propagation algorithm in detail and also mention its applications. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Explain Steps to build a basic Naive Bayes Model in Python. *15,K3,CO6*

OR

b) Explain in detail about the K-Nearest Neighbor algorithm with suitable example. *15,K3,CO6*