3/3/23

Reg. No.												

Question Paper Code	21347

M.E. / M.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022

First Semester

M.E. - Computer Science and Engineering

(Common to M.E. - Computer Science and Engineering (with specialization in Networks))

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.	List the important objectives of machine learning.	*2,K2,CO1*
2.	Differentiate Simple and Linear Regression.	*2, K2,CO1*
3.	Give description about Radial Basis Functions.	*2 ,K2,CO2*
4.	Define sampling and its types.	*2 ,K1,CO2*
5.	State the principles of Decision Trees.	*2 ,K2,CO3*
6.	Elaborate the term CART in Machine Learning.	*2 ,K2,CO3*
7.	List the applications of Genetic Algorithms.	*2 ,K2,CO4*
8.	Discuss about how PCA differs from LDA.	*2 ,K2,CO4*
9.	Define Vector Quantization.	*2 ,K1,CO5*
10.	Discuss about the K-nearest neighbor algorithm.	*2 ,K2,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Explain how Concept learning can be viewed as a Search problem with the help of General to specific ordering of Hypotheses.	*13,K2,CO1*
		OR	
	b)	(i) Discuss the Limitations of Find-S algorithm.	*7,K2,CO1*
		(ii) List the differences between Candidate Elimination algorithm and Find-S algorithm.	*6,K2,CO1*
12.	a)	(i) List the differences between Marcov Chain and Monte carlo models.	*6,K2,CO2*
		(ii) Explain how Monte Carlo Marcov Chain model used in Bayesian Statistics.	*7,K2,CO2*
		OR	

b) Explain how Support Vector Machines are used in Classification and Regression Analysis. 13,K2,CO2

13. a) Illustrate Decision tree Algorithm with an Example. 13,K3,CO3

OR

b) Discuss in detail on how different types of classifiers are combined in different ways. 13,K3,CO3

14. a) (i) Write a short note on Hidden Markov Model. 6,K3,CO4

(ii) Write Brief notes on Evolutionary Algorithms. 7,K3,CO4

OR

b) Explain in detail Principal Component Analysis for Dimension Reduction. 13,K2,CO4

15. a) Demonstrate the Candidate-Elimination algorithm to output a description of the set of all hypotheses consistent with the training examples. 13,K3,CO5

OR

b) Explain Back Propagation concept in detail with the help of Artificial Neural Network with suitable training data set. 13,K2,CO5

PART - C (1 × 15 = 15 Marks)

16. a) Define Bayes Theorem. Illustrate the steps in building a Bayesian classifier with suitable examples. 15,K3,CO6

OR

b) Apply k-Means algorithm to cluster a set of data stored in a .CSV file and comment on the quality of clustering. 15,K3,CO6