Code No.: EC57301PE | R20 | H.T.No. | | | 8 | R | | | | | |

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
II–M.TECH–I–Semester End Examinations (Regular) - Feb- 2022
AI AND MACHINE LEARNING (PE-V)
(VLSI SD)

[Time: 3 Hours] **[Max. Marks: 70]**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 20 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A **(20 Marks)**

1.	a)	List the problems faced in Decision Tree Learning.	[2M]
	b)	Difference between Euclidean distance and Manhattan distance.	[2M]
	c)	Is PCA a Generative Model? Justify.	[2M]
	d)	What is meant by K-Means clustering?	[2M]
	e)	Why is random forest better than linear regression?	[2M]
	f)	What is statistical model in machine learning?	[2M]
	g)	List the characteristics of problems suitable for Artificial Neural Networks (ANNs).	[2M]
	h)	How to build invariances into neural network design?	[2M]
	i)	Make a comparison between the Fuzzy Set verses Crisp Set.	[2M]
	j)	Write the Fuzzy Logic Operations.	[2M]

PART-B **(50 Marks)**

2.	a)	How does Naive Bayes classification work? Explain.	[5M]
	b)	Describe the Support Vector Machines.	[5M]
		OR	
3.	a)	Explain the various issues in Decision Tree learning.	[5M]
	b)	Discuss the general approach to Logistic Regression.	[5M]
4.		Illustrate the Matrix Factorization and Matrix Completion.	[10M]
		OR	
5.	a)	Describe the Generative Adversarial Networks.	[5M]
	b)	Give a brief note on Clustering.	[5M]
6.		Explain the model selection in Regression.	[10M]
		OR	
7.		What is Ensemble Learning? Explain its different techniques.	[10M]
8.		Discuss Back Propagation Algorithm with an example.	[10M]
		OR	
9.	a)	Explain the historical development of Artificial Neural Networks.	[5M]
	b)	Illustrate the Feedback Networks and Radial Basis Function Networks.	[5M]
10.		List and explain the different Defuzzfication methods.	[10M]
		OR	
11.		Explain the integration of Genetic Algorithms with Fuzzy Logic.	[10M]

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