

Code No: R20A7301

**MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**

(Autonomous Institution – UGC, Govt. of India)

**II B.Tech II Semester Supplementary Examinations, June 2024****Principles of Machine Learning****(B.Tech-AIML)**

<b>Roll No</b>									
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**Time: 3 hours****Max. Marks: 70**

**Note:** This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing **ONE** Question from each SECTION and each Question carries 14 marks.

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			<b>BCLL</b>	<b>CO(s)</b>	<b>Marks</b>
<b><u>SECTION-I</u></b>					
<b>1</b>	<b>A</b>	Discuss different forms of learning	<b>L2</b>	<b>CO-I</b>	<b>[7M]</b>
	<b>B</b>	Which disciplines have their influence on machine learning? Explain with examples	<b>L3</b>	<b>CO-I</b>	<b>[7M]</b>
OR					
<b>2</b>	<b>A</b>	Define feature normalization and explain types in it.	<b>L1</b>	<b>CO-I</b>	<b>[7M]</b>
	<b>B</b>	Discuss Principal Component Analysis (PCA) in detail	<b>L2</b>	<b>CO-I</b>	<b>[7M]</b>
<b><u>SECTION-II</u></b>					
<b>3</b>	<b>A</b>	How the linear regression is different from polynomial regression? Explain with examples	<b>L2</b>	<b>CO-II</b>	<b>[7M]</b>
	<b>B</b>	Discuss about decision tree representation, in detail.	<b>L2</b>	<b>CO-II</b>	<b>[7M]</b>
OR					
<b>4</b>	<b>A</b>	Discuss different ensemble methods	<b>L1</b>	<b>CO-II</b>	<b>[7M]</b>
	<b>B</b>	Describe briefly about k-nearest neighbor algorithm	<b>L1</b>	<b>CO-II</b>	<b>[7M]</b>
<b><u>SECTION-III</u></b>					
<b>5</b>	<b>A</b>	Define perceptron and illustrate types of activation functions	<b>L2</b>	<b>CO-III</b>	<b>[7M]</b>
	<b>B</b>	Present the Backpropagation algorithm for feedforward networks and explain each step in it.	<b>L1</b>	<b>CO-III</b>	<b>[7M]</b>
OR					
<b>6</b>	<b>A</b>	Discuss in detail about representation of Neural Networks.	<b>L1</b>	<b>CO-III</b>	<b>[7M]</b>
	<b>B</b>	Explain classification metrics in detail	<b>L2</b>	<b>CO-III</b>	<b>[7M]</b>
<b><u>SECTION-IV</u></b>					
<b>7</b>	<b>A</b>	Define unsupervised learning. Explain K-means Clustering	<b>L2</b>	<b>CO-IV</b>	<b>[7M]</b>
	<b>B</b>	Illustrate different types of linkages in clustering	<b>L3</b>	<b>CO-IV</b>	<b>[7M]</b>
OR					
<b>8</b>	<b>A</b>	Discuss K-means clustering with example	<b>L3</b>	<b>CO-IV</b>	<b>[7M]</b>
	<b>B</b>	Differentiate Hierarchical Clustering and agglomerative clustering in detail	<b>L2</b>	<b>CO-IV</b>	<b>[7M]</b>
<b><u>SECTION-V</u></b>					
<b>9</b>	<b>A</b>	Discuss about Q-learning, with an example	<b>L3</b>	<b>CO-V</b>	<b>[7M]</b>
	<b>B</b>	Explain temporal difference learning in detail.	<b>L2</b>	<b>CO-V</b>	<b>[7M]</b>
OR					
<b>10</b>	<b>A</b>	Write a short note on Markov Decision Process	<b>L2</b>	<b>CO-V</b>	<b>[7M]</b>
	<b>B</b>	What is exploration and exploitation dilemma	<b>L1</b>	<b>CO-V</b>	<b>[7M]</b>

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