Code No.: DS863PE

## CMR ENGINEERING COLLEGE: : HYDERABAD UGC AUTONOMOUS IV–B.TECH–II–Semester End Examinations (Regular) – April - 2025 DEEP LEARNING (CSD)

## [Time: 3 Hours]

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)	What is an Artificial Neural Network?	[2M]
b)	List out the training algorithms for pattern association.	[2M]
c)	Define Unsupervised Learning.	[2M]
d)	Analyze two types of special networks.	[2M]
e)	What is Deep Learning?	[2M]
f)	Discuss about Deep Feed-forward Network.	[2M]
g)	Write about parameter norm penalties.	[2M]
h)	What is dataset augmentation?	[2M]
1)	What is the role of adaptive learning rates in deep learning.	[2M]
J)	Categorize some basic algorithms used for training deep models.	[2 <b>M</b> ]
	PART-B	(50 Marks)
2.a.	Explain about the architecture of a back-propagation network.	[5M]
b.	Describe the basic models of ANN.	[5M]
	OR	
3.a.	What is perceptron? Explain the working of the perceptron network.	[5M]
b.	Give an overview of Hopfield network.	[5M]
4.	Illustrate about the architecture and training of Hamming network.	[10M]
	OR	
5.a.	Demonstrate the architecture of maxnet.	[5M]
b.	What are the salient features of counter propagation network?	[5M]
6.a.	Discuss in detail about hidden units.	[5M]
b.	Categorize the historical trends in Deep Learning and their significance.	[5M]
	OR	
7.	Explain in detail about the concept of gradient based learning.	[10M]
8 9	What is multi task learning? Explain	[5 <b>M</b> ]
0.a. h	Explain hagging and various ensemble methods	[514]
0.	OR	[514]
9.a.	Apply an early stopping algorithm for determining the best amount of time to train.	[5M]
b.	Analyze semi-supervised learning and its applications in deep learning.	[5M]
10.a.	Examine the application of second-order methods to the training of deep networks.	[5M]
b.	Explain how deep learning is applied in computer vision.	[5M]
11	OK	[#3.43
11.a. ۲	Explain the use of deep learning in speech recognition.	[5M]
D.	categorize the major chantenges in neural network optimization and their possible solution ********	18. [5M]

## [Max. Marks: 70]

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