Code No.: AI702PC | **R20** | **H.T.No.** | | | **8** | **R** | | | | | | |

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
IV–B.TECH–I–Semester End Examinations (Supply) – April - 2025
DEEP LEARNING
(CSM , AI&DS)

[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)	Write about Learning Rate.	[2M]
b)	What are the basic models of network architectures?	[2M]
c)	How to initialize Weights and Biases in Neural Networks?	[2M]
d)	What is the difference between supervised and unsupervised learning networks?	[2M]
e)	What is the problem with sigmoid during backpropagation	[2M]
f)	Write about ReLu activation function	[2M]
g)	Distinguish between parameter typing and parameter sharing.	[2M]
h)	How to implement dropout?	[2M]
i)	What are the challenges in neural network optimization?	[2M]
j)	Write short notes on face recognition application.	[2M]

PART-B **(50 Marks)**

2.	What do you mean by Perceptron? What are the different types of Perceptrons?	[10M]
	OR	
3.	Analyze the working of Adaptive Linear Neuron Learning algorithm.	[10M]
4.a.	What are the applications of adaptive resonance theory? Explain briefly.	[5M]
b.	Explain Advantages of adaptive learning theory.	[5M]
	OR	
5.	Demonstrate training algorithm of Learning vector quantization with an example.	[10M]
6.a.	Illustrate learning XOR with an example.	[5M]
b.	Explain Gradient Based Learning.	[5M]
	OR	
7.a.	Explain Back Propagation Algorithm.	[5M]
b.	How to calculate deltas in Back propagation neural networks.	[5M]
8.a.	What is L2 parameter Regularization and show how the addition of weight decay modified learning rule.	[5M] [5M]
b.	Explain Data set augmentation.	
	OR	
9.	Discuss in detail about each of the following : i. Early stopping ii. Regularization iii. Dropouts	[10M]

10.	Write Meta-Algorithm using early stopping to determine at what objective value we start to over fit, and then continue training until that value is recorded.	[10M]

OR

11.a.	Explain large scale deep learning required to solve the commercial applications.	[5M]
b.	Briefly explain about the parameter initialization strategies.	[5M]

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