

**CMR ENGINEERING COLLEGE: : HYDERABAD**  
**UGC AUTONOMOUS**

**IV-B.TECH-I-Semester End Examinations (Supply) - December- 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)	List different models in Deep Learning.	[2M]
b)	What is Artificial Neural Network (ANN)?	[2M]
c)	Define Maxnet in neural networks.	[2M]
d)	Define ART.	[2M]
e)	What is Gradient based learning?	[2M]
f)	What is Activation Function?	[2M]
g)	What is under constrained problem?	[2M]
h)	Differentiate L1 regularization and L2 regularization.	[2M]
i)	What are various challenges in neural network optimization?	[2M]
j)	Define second order method .	[2M]

**PART-B**

**(50 Marks)**

2.	Explain Back propagation with its algorithm	[10M]
<b>OR</b>		
3.	List and explain the various activation functions used in modeling of artificial neuron. Also explain their suitability with respect to applications.	[10M]
4.	Give the Architecture of kohonen self-organizing and explain how it is used cluster the input vectors.	[10M]
<b>OR</b>		
5.	Explain the architecture and algorithm of full CPN with diagram.	[10M]
6.	Explain the operation of deep learning feed forward neural networks	[10M]
<b>OR</b>		
7.	Explain different types of back propagation networks	[10M]
8.	Write an early stopping meta-algorithm for determining the best amount of time to train	[10M]
<b>OR</b>		
9.	Explain various ensemble methods used in deep learning and also explain how it is effecting the model performance.	[10M]
10.	Explain various parameter initialization strategies in deep learning with appropriate example.	[10M]
<b>OR</b>		
11.	Explain the optimization process in deep learning.	[10M]

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