Code No.: DS863PE

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CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
IV–B.TECH–II–Semester End Examinations (Regular) – April - 2024
DEEP LEARNING
(CSD)

[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)	Describe how Deep Learning is related to Artificial Intelligence and Machine Learning.	[2M]
b)	What is Deep Learning?	[2M]
c)	Discuss about Counter Propagation Networks.	[2M]
d)	Explain about Supervised learning and Unsupervised learning.	[2M]
e)	List out common Hidden Unit types.	[2M]
f)	Explain about the use of Back Propagation networks.	[2M]
g)	Describe Regularization for deep learning.	[2M]
h)	Explain importance of Dataset Augmentation.	[2M]
i)	What are the challenges in Neural Network Optimization?	[2M]
j)	Explain about Meta-learning algorithms.	[2M]

PART-B   (50 Marks)

2.a)	Explain in detail about Artificial Neural Networks.	[5M]
b)	Explain in detail about Supervised Learning Networks.	[5M]

OR

3. Explain the architecture of Back Propagation networks and describe Back Propagation [10M]
algorithm for training.

4.	Discuss about the following:	
a)	Hamming network.	[5M]
b)	Adaptive Resonance Theory networks.	[5M]

OR

5. Give the Architecture of Kohonen Self-Organizing and explain how it is used to cluster [10M]
the input vectors.

6.a)	List and explain about the historical trends in Deep Learning.	[5M]
b)	Explain the working of Deep Feed Forward Networks.	[5M]

OR

7. Write short notes on Architecture Design and Gradient-Based Learning. [10M]

8.	Explain about the following:	
a)	Semi-supervised learning.	[5M]
b)	Multi-task learning.	[5M]

OR

9.a)	Explain Adversarial Training and Tangent Distance.	[5M]
b)	What is Noise Robustness in Deep Learning? Explain.	[5M]

10.a)	Give a brief history of deep learning for Natural Language Processing.	[5M]
b)	Explain about approximate Second-Order Methods for the training of deep networks.	[5M]

OR

11. Discuss about one of Deep learning application Computer Vision. [10M]

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