Code No.: AI702PC

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CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
IV–B.TECH–I–Semester End Examinations (Regular) - November- 2024
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)	Define the term "Artificial Neural Network."	[2M]
b)	What is a Perceptron Network?	[2M]
c)	What is unsupervised learning in neural networks?	[2M]
d)	Describe the basic structure of a Hamming Network.	[2M]
e)	What is deep learning?	[2M]
f)	Why gradient descent is widely used in deep learning?	[2M]
g)	Define multi-task learning.	[2M]
h)	What is tangent distance?	[2M]
i)	What is parameter initialization in deep learning?	[2M]
j)	What is large-scale deep learning?	[2M]

PART-B   (50 Marks)

2. Explain the concept of an Artificial Neural Network (ANN) and its significance in Deep learning   [10M]

OR

3. Discuss how a single-layer perceptron works. Provide an example of a problem.   [10M]

4. Describe the structure of Fixed Weight Competitive Nets and explain their role in clustering tasks.   [10M]

OR

5. Explain Maxnet functions in a competitive network and write its role in feature selection.   [10M]

6. Explain the concept of deep learning and discuss how it differs from traditional machine learning.   [10M]

OR

7. Describe the process of designing a deep learning architecture for a specific task, such as image classification.   [10M]

8. Compare constrained optimization with unconstrained optimization in the context of regularizing deep neural networks.   [10M]

OR

9. Describe the impact of early stopping on model performance and training time.   [10M]

10. Describe how poor parameter initialization can handle training performance and model convergence.   [10M]

OR

11. Explain about Large -scale Deep learning.   [10M]

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