

Code No.: AI702PC

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H.T.No.

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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]
- OR**
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]
- OR**
5. Explain the architecture and algorithm of full CPN with diagram. [10M]
6. Explain the operation of deep learning feed forward neural networks [10M]
- OR**
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]
- OR**
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]
- OR**
11. Explain the optimization process in deep learning. [10M]

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