

Code No.: AI702PC

R20

H.T.No.

8

R

CMR ENGINEERING COLLEGE: : HYDERABAD  
UGC AUTONOMOUS

IV-B.TECH-I-Semester End Examinations (Regular) - November- 2023

DEEP LEARNING

(CSM)

[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) Differentiate between AI and DL. [2M]
- b) What is Neural Networking? [2M]
- c) Draw the Architecture of Discrete Hopfield Network. [2M]
- d) How do Kohonen Self-Organizing Map works? [2M]
- e) What is a Loss function and give the classification of loss functions [2M]
- f) What is a Saddle Point? [2M]
- g) What is Random Weight initialization? [2M]
- h) What is Regularization? [2M]
- i) What are the challenges in Neural Network Optimization? [2M]
- j) What is Natural language processing? [2M]

**PART-B**

**(50 Marks)**

2. What is Back Propagation? Explain Back Propagation Neural Networks Training Algorithm. [10M]

**OR**

- 3.a) What is BAM? Explain briefly. [6M]
- b) if  $x=(0,0,1)$  is applied at x layer, what is the associated y in this BAM. [4M]

4. Discuss about Fixed Weight Competitive Nets with a neat diagram. [10M]

**OR**

5. Explain the types of Counter Propagation Networks with example. [10M]

- 6.a) Justify the importance of Rectified linear units in Hidden units. [5M]

- b) Describe about learning conditional statistics in Gradient Based Learning. [5M]

**OR**

7. Explain output units of Feed Forward Networks. [10M]

8. Develop a data set and demonstrate Noise Robustness. [10M]

**OR**

- 9.a) Explain L1 Regularization along with its weight update. [5M]

- b) Discuss about Drop Out Regularization technique. [5M]

10. Explain the following deep learning applications:

- a) Speech recognition. [6M]

- b) Computer vision. [4M]

**OR**

11. Discuss how learning differs from Pure Optimization. [10M]

\*\*\*\*\*