Code No : 20CM6T01 **R20**

III B. TECH II SEMESTER REGULAR EXAMINATIONS APRIL - 2023
DEEP LEARNING
(CSE – ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

Time: 3 hours Max. Marks: 70

Note: Answer **ONE** question from each unit **(5 × 14 = 70 Marks)**

UNIT-I

1.	a)	Give an example of learning XOR function to describe a fully functioning feed forward network.	[7M]
	b)	What is an activation function and why to use them.	[7M]

(OR)

2.	a)	Compare fed forward and fed backward networks.	[7M]
	b)	Why convergence is not guaranteed for back propagation algorithm.	[7M]

UNIT-II

3.	a)	Describe the ill- conditioning problem in neural network optimization.	[7M]
	b)	Discuss the advantages of L1 regularization over L2 regularization.	[7M]

(OR)

4.	a)	Illustrate the RMSProp algorithm.	[7M]
	b)	Why do we need better optimization algorithm? Illustrate AdaGrad optimization strategy.	[7M]

UNIT-III

5.	a)	Illustrate the operation of pooling layer in CNN with simple example.	[7M]
	b)	Differentiate artificial neural networks and convolutional neural networks.	[7M]

(OR)

6.	a)	Draw the architectures of AlexNet, VGGnet and single ResNet block.	[7M]
	b)	What does bias do in deep learning? How the weights and bias are updated in neural network?	[7M]

UNIT-IV

7.	a)	How early stopping acts as a regularizer.	[7M]
	b)	What is dropout and why is it used? Discuss the benefits of dropout in deep neural networks.	[7M]

(OR)

8.	a)	What are the different normalization layers in deep learning? Illustrate group normalization in detail.	[7M]

b) Why data augmentation is important in image classification? List the different types of data augmentation techniques. Explain any two techniques in detail. [7M]

UNIT-V

9. a) Draw the architecture of LSTM and explain its application. [7M]

b) Differentiate deep learning and natural language processing. [7M]

(OR)

10. a) What is RNN? Draw its architecture and explain the difficulties in training them. [7M]

b) With a suitable example explain the process of CBOW word2vec model. [7M]

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