


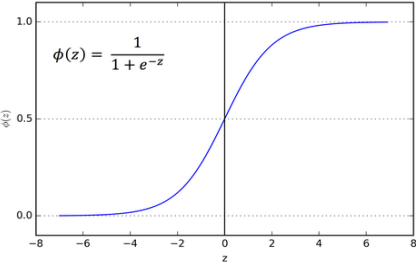
Name: Enrolment No:	
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UPES
End Semester Examination, May 2024

Course: Deep Learning (Neural Network) Program: B.Tech(CSE-All) Course Code: CSAI3015P	Semester: VI Time : 03 hrs. Max. Marks: 100
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Instructions: Answer all the questions.

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	Describe deep learning's role in solving unsupervised learning tasks.	4	CO1
Q 2	Discuss the benefits and drawbacks of single layer and multi-layer perceptron.	4	CO2
Q 3	Identify the following activation functions and discuss one application where this activation function is suitable? 	4	CO3
Q 4	Explain the purpose of cross validation in machine learning.	4	CO4
Q 5	State the exploding gradient problem. Identify the areas this problem is found.	4	CO2

SECTION B
(4Qx10M= 40 Marks)

Q 6	Identify the problems associated with Recurrent Neural Network (RNN). State how these problems are rectified in Long Short-Term Memory.	10	CO3
Q 7	Implement AND function using Mc. Culloch and Pitts neural network model.	10	CO1
Q 8	Demonstrate image captioning using Deep learning models. Support with suitable example.	10	CO2

Q 9	<p>Critically comment on various data augmentation techniques. Why data augmentation is important in deep learning?</p> <p style="text-align: center;">OR</p> <p>Compare Hebbian learning and Memory-based learning with their mathematical expression.</p>	10	CO1
<p>SECTION-C (2Qx20M=40 Marks)</p>			
Q 10	<p>Design a suitable Deep Learning model for named entity recognition task. Provide any two applications in detail where named entity recognition task is important.</p>	20	CO3
Q 11	<p>An imaging technique that is frequently used in medicine to diagnose a variety of illnesses and ailments is magnetic resonance imaging (MRI). However, radiologists may find it difficult and time-consuming to interpret MRI pictures. The interpretation of medical images, such as MRI scans, can be automated with the use of Convolutional Neural Networks (CNNs).</p> <ul style="list-style-type: none"> • Investigate how the CNN architecture utilizes to classify MRI images. • Argue the reasoning behind selecting CNN architecture. • Investigate any changes or adjustments made to the architecture to meet the needs of MRI image classification. <p style="text-align: center;">OR</p> <p>Investigate the working of speech recognition system using LSTM model. Critically judge the LSTM's role in generating natural language responses in speech recognition systems.</p>	20	CO4