

Code: 19CS4701A

**IV B.Tech - I Semester – Regular Examinations - DECEMBER 2022**

**DEEP LEARNING  
(COMPUTER SCIENCE & ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

- Note: 1. This question paper contains two Parts A and B.  
 2. Part-A contains 5 short answer questions. Each Question carries 2 Marks.  
 3. Part-B contains 5 essay questions with an internal choice from each unit. Each question carries 12 marks.  
 4. All parts of Question paper must be answered in one place.

BL – Blooms Level

CO – Course Outcome

**PART – A**

		BL	CO
1. a)	Differentiate Machine Learning and Deep Learning.	L2	CO1
1. b)	Define GAN.	L1	CO1
1. c)	How does a CNN differ from a fully connected neural network?	L1	CO1
1. d)	Compare RNN with ANN.	L2	CO1
1. e)	Write any 4 real-time applications of deep learning.	L1	CO1

**PART – B**

			BL	CO	Max. Marks
<b>UNIT-I</b>					
2	a)	How many Activation functions are there? What are they? Explain them briefly with their formulas.	L2	CO1	6 M

	b)	Demonstrate Biological Neuron and construct the mathematical model of McCulloch-Pitts Neuron.	L3	CO2	6 M
<b>OR</b>					
3	a)	What are the sub areas of AI? Explain each of them in-detail.	L2	CO1	6 M
	b)	Show the Common Architectural Principles of Deep Networks.	L3	CO2	6 M
<b>UNIT-II</b>					
4	a)	Construct Restricted Boltzmann Machine with an example.	L3	CO2	6 M
	b)	How do GANs work? Explain the steps for training GAN.	L2	CO1	6 M
<b>OR</b>					
5	a)	What is Auto-Encoder? Construct regularized Auto-Encoders.	L3	CO2	6 M
	b)	How the pre-trained models for text classification and object detection differ from each other?	L2	CO1	6 M
<b>UNIT-III</b>					
6	a)	What is a Convolutional Neural Network (CNN) and how does it work?	L2	CO1	6 M
	b)	Examine the concept "What happens when the value of stride is high and low?"	L4	CO4	6 M
<b>OR</b>					
7	a)	Explain Stride, Padding, Max-pooling and Flattening using an example.	L2	CO1	6 M

	b)	Examine the Convolution operation.	L4	CO4	6 M
<b>UNIT-IV</b>					
8	a)	Why LSTM is required? Define it in detail with its architecture.	L2	CO1	6 M
	b)	Construct Recurrent Neural Network theorem.	L3	CO3	6 M
<b>OR</b>					
9	a)	Write a short notes on i) Deep Recurrent Networks ii) Recursive Neural Networks	L2	CO1	6 M
	b)	Construct any two applications of Recursive Neural Networks.	L3	CO3	6 M
<b>UNIT-V</b>					
10	a)	Why NLP is needed? What are the components of NLP? Explain them.	L2	CO1	6 M
	b)	Explain Dropout. How dropout can reduce the over-fitting?	L2	CO1	6 M
<b>OR</b>					
11	a)	Illustrate the preprocessing steps for Twitter Data Analysis.	L3	CO3	6 M
	b)	Explain object detection in CNN with example.	L2	CO1	6 M