Course Code: 23CSE3D01

BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE

(AUTONOMOUS)

II - M. Tech I-Semester Regular/Supplementary Examinations (BR23), Dec - 2025

DEEP LEARNING (CSE)

Time: 3 hours Max. Marks: 75

Answer any Five Questions One Question for One UNIT
ALL the Question Carry Equal Marks

		Marks	CO	BL
	UNIT-I			
1.a)	Identify different types of fundamental learning techniques with examples.	7M	1	BL1
b)	Define a feedforward neural network and its primary components.	8M	1	BL2
	OR			
2.a)	Describe the advantages of using a multi-layer neural network compared to a single-layer perceptron.	7M	1	BL2
b)	List the key features of deep learning frameworks.	8M	1	BL1
	UNIT-II	**Marks**	**CO**	**BL**
3.a)	List common loss functions used for classification and regression tasks.	7M	2	BL1
b)	Analyse the advantages of using CRFs over HMMs for structured prediction tasks.	8M	2	BL3
	OR			
4.a)	Explain how backpropagation works in updating the weights of a neural network.	7M	2	BL2
b)	Define a Conditional Random Field (CRF) and its primary purpose.	8M	2	BL1
	UNIT-III	**Marks**	**CO**	**BL**
5.a)	Explain how a deep feed-forward network processes data from input to output.	7M	3	BL2
b)	Define a deep belief network and describe its architecture.	8M	3	BL1
	OR			
6.a)	Define regularization and list its different types.	7M	3	BL1
b)	Explain how convolutional and pooling layers work in a CNN.	8M	3	BL2
	UNIT-IV	**Marks**	**CO**	**BL**
7.a)	Discuss how RBMs are used as building blocks for deep belief networks (DBNs).	7M	4	BL2
b)	Explain the process of dimensionality reduction using autoencoders.	8M	4	BL2
	OR			
8.a)	Explain how sigmoid activation contributes to the learning process in neural networks.	7M	4	BL2
b)	Define an autoencoder and describe its structure.	8M	4	BL1
	UNIT-V	**Marks**	**CO**	**BL**
9.a)	Explain how convolutional neural networks (CNNs) are utilized in object recognition.	7M	5	BL2
b)	Discuss the role of Theano in enabling the development of other deep learning frameworks.	8M	5	BL3
	OR			
10.a)	Discuss the importance of transfer learning in computer vision tasks.	7M	5	BL2
b)	Discuss the advantages and limitations of using Caffe for deep learning.	8M	5	BL2

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