Velegapudi Ramakrishna Siddhartha Engineering College::Vijayawada
(Autonomous)

VR20

IV/IV B Tech Degree Examinations(December/2023)
Seventh Semester
Department of Information Technology

20IT7301-DEEP LEARNING

Time:3Hrs	MODEL QUESTION PAPER	Max Marks:70

Part – A is Compulsory
Answer one (01) question from each unit of Part – B
Answers to any single question or its part shall be written at one place only

Cognitive Levels(K): K1-Remember;K2-Understand; K3-Apply; K4-Analyze; K5-Evaluate; K6-Create

Q. No		Question	Marks	Course Outcome	Cog. Level
Part - A			10X1=10M		
1	a	Differentiate between Machine Learning and deep Learning.	1	CO1	K2
	b	What is the need for validation data in deep learning?	1	CO1	K4
	c	List any three hyper parameters used in deep learning models	1	CO2	K2
	d	Explain the use of zero padding in CNN	1	CO2	K2
	e	List the types of layers in CNN.	1	CO2	K1
	f	What is sparsity in autoencoder	1	CO2	K2
	g	List any 4 applications of deep learning.	1	CO1	K1
	h	What is a recurrent neural network?	1	CO3	K2
	I	Write the difference between convolutional neural network and recurrent network.	1	CO3	K2
	j	Briefly explain attention mechanism	1	CO2	K2
Part - B			4X15 =60M		
		UNIT - I			
2	a	Write the functional description of a biological neuron's structure with a suitable diagram and explain how artificial neuron structure can be compared with biological neuron structure.	9	CO1	K4
	b	List and explain various activation functions	6	CO1	K2
		(OR)			
3	a	Summarize back propagation algorithm in reducing the error	8	CO1	K4
	b	Explore different techniques to prevent overfitting in deep neural networks.	7	CO1	K2
		UNIT - II			
4	a	Consider the problem of classification of cats and dogs. Assume each image is of 28X28 size. Draw VGG architecture that can satisfy the given classification problem and explain different layers used in the model.	8	CO2	K3
	b	Apply convolution operation on the following input image shown with the given kernel and show the output image with stride=1 and stride=2 (i) Without zero padding (ii) With zero padding Input 1 1 1 0 0 0 1 1 1 0 0 0 1 1 1 0 0 1 1 0 0 1 1 0 0 Kernel 1 0 1 0 1 0 1 0 1	7	CO2	K3
		(OR)			
5	a	Differentiate between PCA and Autoencoder for dimensionality	7	CO2	K4

		reduction.			
	b	Explain the concept of denoising in auto encoders	8	CO2	K2
UNIT – III					
6	a	Explain unfolding computational graphs in detail	7	CO3	K2
	b	Draw an RNN architecture for summarizing a sequence and produce a fixed- size representation	8	CO3	K3
(OR)					
7	a	Discuss the challenges of long term dependencies	7	CO3	K2
	b	Discuss about LSTM architecture in detail.	8	CO3	K2
UNIT – IV					
8	a	Discuss the application of the visual attention approach for image captioning	7	CO2	K3
	b	Explain the working of Neural Turing machine with a neat diagram	8	CO2	K2
(OR)					
9	a	What is GAN? Explain the process of generating image data with GAN	9	CO2	K3
	b	Discuss the limitations of Neural Networks	6	CO1	K4