



KONERU LAKSHMAIAH EDUCATION FOUNDATION

(Deemed to be University, Estd. u/s. 3 of UGC Act 1956)

B.Tech - Even Sem : End Semester Exam
Academic Year:2021-2022
19EM3114 - DEEP LEARNING
Set No: 1

Time:		Max.Marks: 100					
S.NO	Answer All Questions	Choice	Options	Marks	CO	CO BTL	COI BTL
1.	What is the condition for pattern classification using McCulloch-Pitts neuron model for the below data X1 X2 X3 y 0 0 0 0 0 1 0 0 1 0 1 0 1 1 1 1 0 0 0 1 0 1 0 1 1 0 1 1 1 1 1	choice Q-2		10Marks	CO1	2	2
2.	Compare perceptron and Gradient Descent rule.			10Marks	CO1	2	2
3.	Answer A and B	choice Q-4		15Marks	CO1	2	2
3.A.	Find the y when $x_1=1, x_2=-1$ using relu activation and hidden layer and softmax at output layer.			8Marks	CO1	2	2
3.B.	Obtain the Singular Value Decomposition analysis on the following data 12 13 5 6 -1 2 3 6 9			7Marks	CO1	2	2
4.	Answer A and B			15Marks	CO1	2	2
4.A.	Evaluate Back Propagation algorithm for XOR function with two hidden layers and show all the error calculations			8Marks	CO1	2	2
4.B.	What are Eigen values and Eigen vectors?			7Marks	CO1	2	2
5.	What is data augmentation? Why is data augmentation used? List different data augmentation techniques used in deeplearning problems.	choice Q-6		10Marks	CO2	3	3
6.	What is Denoising Autoencoder? Explain the working of the same.			10Marks	CO2	3	3
7.	Answer A and B	choice Q-8		15Marks	CO2	3	3
7.A.	How is batch normalization performed in deep neural networks?			8Marks	CO2	3	3
7.B.	Why does regularization help reduce overfitting?			7Marks	CO2	3	3
8.	Answer A and B			15Marks	CO2	3	3
8.A.	How pooling is used as feature reduction? What are the various types of Pooling methods.			8Marks	CO2	3	3
8.B.	Explain the architecture of RCNN			7Marks	CO2	3	3
9.	Differentiate RNN and Feed forward neural networks in detail.	choice Q-10		10Marks	CO3	3	3
10.	How does LSTM solve the vanishing gradient challenge?			10Marks	CO3	3	3
11.	Answer A and B	choice Q-12		15Marks	CO3	3	3
11.A.	How the Variational autoencoder (VAE) is different from basic autoencoder			8Marks	CO3	3	3
11.B.	Explain the Advantages and disadvantages of RNN			7Marks	CO3	3	3
12.	Answer A and B			15Marks	CO3	3	3
12.A.	Discuss about neural style transfer?			8Marks	CO3	3	3
12.B.	How do you train deep dream? explain in detail			7Marks	CO3	3	3
13.	You want to train a neural network to drive a car. Your training data consists of grayscale 64×64 pixel images. The	choice Q-14		10Marks	CO4	3	3

	training labels include the human driver's steering wheel angle in degrees and the human driver's speed in miles per hour. Your neural network consists of an input layer with $64 \times 64 = 4,096$ units, a hidden layer with 2,048 units, and an output layer with 2 units (one for steering angle, one for speed). You use the ReLU activation function for the hidden units and no activation function for the outputs (or inputs). Calculate the number of parameters (weights) in this network. Include the bias terms. And find the output for one instance.						
14.	Illustrate the forward and backward pass of RBM model			10Marks	CO4	3	3
15.	Answer A and B	choice		15Marks	CO4	3	3
15.A.	Show the functioning principle of GAN taking the Generator, Discriminator into consideration. 12			8Marks	CO4	3	3
15.B.	What are the fundamental trade-offs between GANs and other generative models			7Marks	CO4	3	3
16.	Answer A and B			15Marks	CO4	3	3
16.A.	Answer the question using the below diagram. Emission table shows the output symbols and the hidden states A and B. s_n refers to the n th hidden state in the sequence and o_n refers to the n th observation. Transition matrix T also given.			8Marks	CO4	3	3
16.B.	What are the applications of GAN with examples			7Marks	CO4	3	3

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