



# 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  
**19CS3269A - DEEP LEARNING**  
Set No: 2

Time:

Max.Marks: 100

S.NO	Answer All Questions	Choice	Options	Marks	CO	CO BTL	COI BTL
1.	Suppose 10000 patients get tested for flu; out of them, 9000 are actually healthy and 1000 are actually sick. For the sick people, a test was positive for 620 and negative for 380. For the healthy people, the same test was positive for 180 and negative for 8820. Construct a confusion matrix for the data and compute the precision and recall for the data	choice Q-2		10Marks	CO1	2	2
2.	Compare Feature Extraction and Feature Selection techniques. Explain how dimensionality can be reduced using SVD			10Marks	CO1	2	2
3.	Answer A and B	choice Q-4		15Marks	CO1	2	2
3.A.	Illustrate difference between Machine learning and Deep learning			7Marks	CO1	2	2
3.B.	Consider a binary classification problem where input instances are represented in the points in 2 dimensional plane. The inputs are $x_1, x_2$ . all the inputs uses threshold activation function $z=1$ if $z \geq 0$ or else $z=0$ . . Create inputs such that it should be binary classification problem and if cant be solved by perceptron. Prove it by calculating the predicted outputs			8Marks	CO1	2	2
4.	Answer A and B			15Marks	CO1	2	2
4.A.	Calculate the output $y$ of a three input neuron with bias. The input feature vector is $(x_1, x_2, x_3) = (0.8, 0.6, 0.4)$ and weight values are $[w_1, w_2, w_3, b] = [0.2, 0.1, -0.3, 0.35]$ . Use binary Sigmoid function as activation function.			7Marks	CO1	2	2
4.B.	Implement PCA on a 2-D Dataset . Explain the procedure step by step.			8Marks	CO1	2	2
5.	Illustrate Loss functions Cross-entropy, L2, L1 in detail	choice Q-6		10Marks	CO2	3	2
6.	Describe the transition between R-CNN, Fast R-CNN and Faster RCNN for object detection.			10Marks	CO2	3	2
7.	Answer A and B	choice Q-8		15Marks	CO2	3	2
7.A.	Draw and explain the architecture of convolutional network			7Marks	CO2	3	2
7.B.	Compare Cross validation with Bootstrapping Techniques			8Marks	CO2	3	2
8.	Answer A and B			15Marks	CO2	3	2
8.A.	Explain the neural networks used to learn multiple			7Marks	CO2	3	3

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classes for a K class Classification Problem							
8.B.	What is the meaning of overfitting? how do you overcome it?			8Marks	CO2	3	2
9.	.Explain LSTM (Long Short Term Memory ) structure in detail	choice Q-10		10Marks	CO3	3	2
10.	Explain deep dream architecture and its loss functions			10Marks	CO3	3	2
11.	answer A and B	choice Q-12		15Marks	CO3	3	3
11.A.	How do you construct variational auto encoder			7Marks	CO3	3	2
11.B.	distinguish Gated Recurrent Units (GRUs) and Long Short Term Memory (LSTM) Cells			8Marks	CO3	3	2
12.	answer A and B			15Marks	CO3	3	2
12.A.	What is the difference between Deep belief network and Boltzmann machine			7Marks	CO3	3	2
12.B.	Illustrate Deep dream generator			8Marks	CO3	3	2
13.	Explain the basic elements of a Hidden Markov Model (HMM). List any two applications of HMM.	choice Q-14		10Marks	CO4	3	2
14.	Explain Gan model architecture with neat diagram			10Marks	CO4	3	2
15.	Answer A and B	choice Q-16		15Marks	CO4	3	2
15.A.	Describe How Evaluation problem can be solved by using Hidden Markov Model.			7Marks	CO4	3	2
15.B.	Describe any two Autoregressive Models -NADE, MADE, PixelRN			8Marks	CO4	3	2
16.	Answer A and B			15Marks	CO4	3	2
16.A.	How do you implement Restricted Boltzmann Machines for Unsupervised Learning,			7Marks	CO4	3	2
16.B.	What is a Bottleneck in autoencoder and why is it used?			8Marks	CO4	3	2

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