RAMAIAH
Institute of Technology

Dept. of Computer Science and Engineering (AI & ML)
& Computer Science and Engineering (Cyber Security)

Programme: B E – Computer Science and Engineering (AI & ML) & Computer Science and Engineering (Cyber Security)

Internal Assessment – I

TERM:	3rd March 2025 to 21st June 2025	**COURSE NAME:**	Introduction to Deep Learning
DATE:	24-04-2025 11:00AM to 12:00AM	**COURSE CODE:**	CI62
MAX MARKS:	30	**PORTIONS:**	L1-L26

Mobile Phones are banned

Instructions to Candidates: Answer any two full questions. Marks: 15x2=30

Q.No	Questions	Blooms Levels (L1 to L6)	CO	Marks
1.a	Discuss how the Perceptron functions as the basic structural element in building neural networks with a neat diagram.	L2	CO1	4
b	Describe Categorical Cross Entropy (CCE) and Binary Cross-Entropy (BCE). For the given output of Softmax activation [0.7,0.1,0.2] and tragets [1,0,0], Calculate the CCE Loss.	L3	CO2	2*3
c	Explain the steps involved in how a Convolutional Neural Network (CNN) classifies image data.	L2	CO3	5
2.a	Differentiate Biological Neuron and Artificial Neuron.	L2	CO1	5
b	Derive the update rule for Gradient Descent used to minimize a given loss function.	L3	CO2	6
c	What is Pooling Operation in CNN? Perform max pooling and average pooling for the given feature map in Fig.2c. by considering a 2x2 Window with stride = 2 1 3 2 4 5 6 7 8 9 10 11 12 13 14 15 16 Fig.2c	L3	CO3	4
3.a	Explain the Softmax and ReLU activation functions with graph representations. Illustrate the concept of dead neurons in a neural network.	L2	CO1	5