PRESIDENCY UNIVERSITY

BENGALURU

Mid - Term Examinations – October 2025

Date: 08-10-2025   **Time:** 09.30am to 11.00am

School: SOIS	**Program:** BCA (Data Science)	
Course Code: CSA3071	**Course Name:** Deep Learning	
Semester: V	**Max Marks**:50	**Weightage**:25%

CO - Levels	CO1	CO2	CO3	CO4	CO5
Marks	26	24			

Instructions:

    (i) *Read all questions carefully and answer accordingly.*
    (ii) *Do not write anything on the question paper other than roll number.*

Part A

Answer ALL the Questions. Each question carries 2marks.   **5Q x 2M=10M**

1	Define deep learning with an application.	2 Marks	L1	CO1
2	What is gradient descent?	2 Marks	L1	CO1
3	What is a cost function in machine learning?	2 Marks	L1	CO1
4	If input size is 7×7, filter size is 3×3, stride is 2, and padding is 1, what is the output size?	2 Marks	L3	CO2
5	What is a convolution operation in CNN?	2 Marks	L2	CO2

Part B

Answer the Questions.   **Total Marks 40M**

6.	a.	Explain feedforward neural networks and their architecture with a diagram.	10 Marks	L2	CO 1
		Or			
7.	a.	Describe the process of optimizing a logistic classifier using gradient descent.	10 Marks	L2	CO 1

8.	a.	Discuss the limitations of traditional machine learning and how deep learning overcomes them.	10 Marks	L1	CO 2
		Or			
9.	a.	Compare batch, mini-batch, and stochastic gradient descent with examples.	10 Marks	L1	CO 2

10.	a.	Describe the architecture and working of a Convolutional Neural Network (CNN).	10 Marks	L2	CO 1
		Or			
11.	a.	Explain the role of pooling and striding in CNNs with examples.	10 Marks	L2	CO 1

12.	a.	What are the different types of activation functions used in deep learning? Explain with graphs.	10 Marks	L3	CO 2
		Or			
13.	a.	Explain the applications, advantages, and disadvantages of Convolutional Neural Networks (CNNs).	10 Marks	L3	CO 2