Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

Mid - Term Examinations – October 2025

Date: 08-10-2025 **Time:** 11.45am to 01.15pm

School: SOCSE	**Program:** B. Tech	
Course Code: CAI2502	**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	List any 2 Deep Learning architectures.	**2 Marks**	**L1**	**CO1**
2	Define Pooling with respect to CNN.	**2 Marks**	**L1**	**CO2**
3	Write the syntax to compile the model with 'optimizer',' loss' and 'metrics' hyperparameters set to values of your choice.	**2 Marks**	**L1**	**CO1**
4	What is zero padding with respect to convolutional neural networks.	**2 Marks**	**L1**	**CO2**
5	Write the syntax to fit the keras model on the dataset with 50 epochs and batch size of 15.	**2 Marks**	**L1**	**CO1**

Part B

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

6.	**a.**	Different weight initialization schemes are used according to the activation function on each layer of a Deep neural network. Distinguish between Zero Initialization and He Initialization techniques.	**10 Marks**	**L2**	**CO1**

	b.	Use python packages and libraries to perform the following tasks on house-prices dataset: • Import necessary packages • Load Dataset • Define MLP Model • Compile Model • Evaluate the model	**10 Marks**	**L3**	**CO1**
		Or			
7.	**a.**	Different weight initialization schemes are used according to the activation function on each layer of a Deep neural network. Distinguish between Random Initialization and Xavier Initialization techniques.	**10 Marks**	**L2**	**CO1**
	b.	Use python packages and libraries to perform the following tasks: • Import necessary packages • Split into input(X) and output(y) variables • Define the keras model • Compile the keras model and specify the training parameters of the architecture • Fit the keras model on the dataset	**10 Marks**	**L3**	**CO1**

8.	**a.**	Explain with the help of diagrams, typical CNN architecture.	**10 Marks**	**L2**	**CO2**
	b.	Write the python code to design a CNN model using TensorFlow/Keras to classify images from the CIFAR-10 dataset (10 categories like airplane, dog, car, etc.).	**10 Marks**	**L3**	**CO2**
		Or			
9.	**a.**	Explain the concept of feature learning and classification layers with respect to convolutional neural networks.	**10 Marks**	**L2**	**CO2**
	b.	Give the python code to design a Convolutional Neural Network (CNN) model using TensorFlow/Keras to classify images from the MNIST dataset (handwritten digits 0-9).	**10 Marks**	**L3**	**CO2**