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**PRESIDENCY UNIVERSITY
BENGALURU**

**SCHOOL OF ENGINEERING
MID TERM EXAMINATION - OCT 2023**

Semester : Semester VII - 2020

Course Code : CSE3010

Course Name : Sem VII - CSE3010 - Deep Learning Techniques

Program : B.TECH

Date : 30-OCT-2023

Time : 11:30AM - 1:00PM

Max Marks : 60

Weightage : 30%

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Question paper consists of 3 parts.

(iii) Scientific and non-programmable calculator are permitted.

(iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS

(5 X 2 = 10M)

1. Define venna neural network

(CO1) [Knowledge]

2. Define activation function. list out its types.

(CO1) [Knowledge]

3. List out any two weight initialization techniques.

(CO1) [Knowledge]

4. Define Feature Map in the context of convolutional neural networks.

(CO2) [Knowledge]

5. Differentiate between LSTM and GRU. Mention which one is used more often.

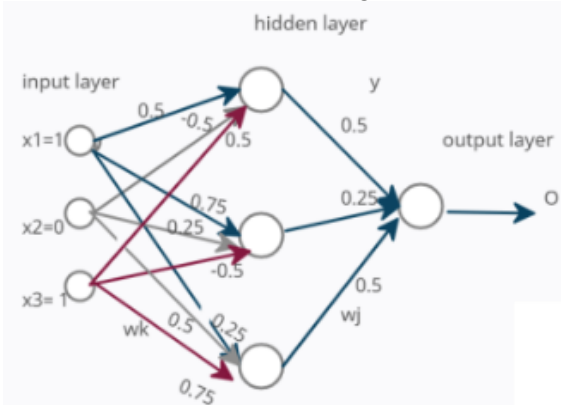
(CO2) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS

(2 X 15 = 30M)

6. Consider the multi layer feed forward neural network with inputs x_1, x_2, x_3 with weight W and bias for first hidden layer is 0.5 and bias for output layer is 0.10. Assume that the neurons have a Sigmoid Activation Function and target is 0.75.



- a. Calculate the output of the Neural network.
b. Calculate the error value using any of the suitable error metric.
- (CO1) [Comprehension]
7. Mention whether or not pooling layer exists in a convolutional neural network (CNN). If it does, mention whether or not the translation invariation is preserved with an example.

(CO2) [Comprehension]

PART C

ANSWER THE FOLLOWING QUESTION

(1 X 20 = 20M)

8. List the main gates in LSTM and their tasks. Explain their steps in detail.

(CO2) [Application]