

Roll No



**PRESIDENCY UNIVERSITY  
BENGALURU**

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

**Semester :** Semester VI - 2020

**Course Code :** CSE3010

**Course Name :** Sem VI - CSE3010 - Deep Learning Techniques

**Program :** CAI&CST

**Date :** 13-APR-2023

**Time :** 9.30AM - 11.00AM

**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. What are the criterias to select the number of hidden layers in neural networks?  
(CO1) [Knowledge]
2. List down two main differences between Machine and Deep Learning.  
(CO1) [Knowledge]
3. List down the problems of RNN.  
(CO2) [Knowledge]
4. What is the formula for convolution operation and explain each term in it?  
(CO2) [Knowledge]
5. Why padding is required in convolution and what are the typical values that can be set for padding?  
(CO2) [Knowledge]

**PART B**

**ANSWER ALL THE QUESTIONS**

**(4 X 5 = 20M)**

6. Explain loss function for regression technique.  
(CO1) [Comprehension]

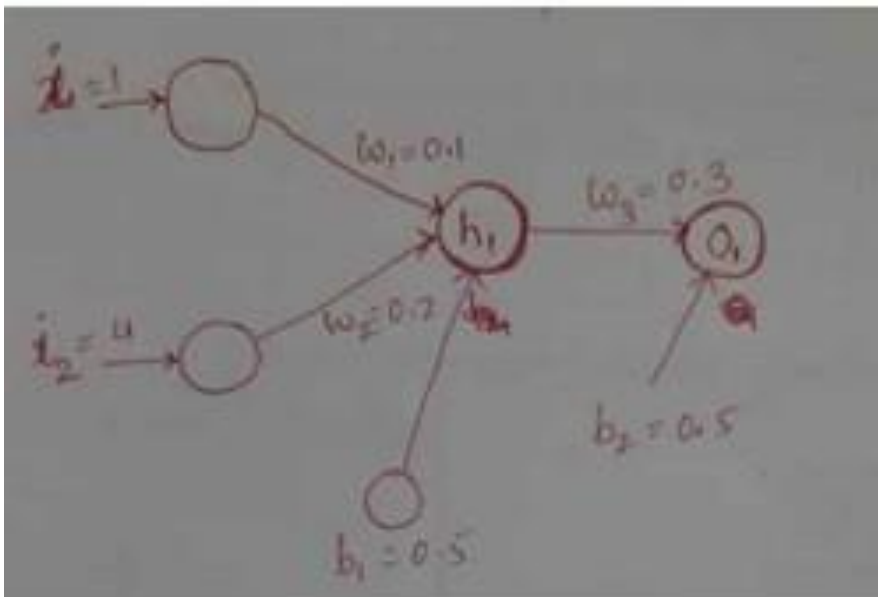
7. Calculate the no. of trainable parameters with a neat sketch of neural networks, considering feed-forward neural network with three hidden layers. Number of units in the input, first hidden, second hidden, third hidden and output layers are respectively 3, 5, 6, 4 and 2. (CO1) [Comprehension]
8. Explain feature extraction process of CNN. (CO2) [Comprehension]
9. Illustrate the working of convolution operation and dimension calculation of convolved feature map. (CO2) [Comprehension]

### PART C

**ANSWER ALL THE QUESTIONS**

**(2 X 15 = 30M)**

10. For the neural network structure given below, apply forward (two passes) and backward (one pass) propagation technique with an error computed at each stage.



11. Illustrate the working of convolutional neural network architecture for image classification in detail. (CO1) [Application]  
(CO2) [Application]