Deep Learning

FFNN

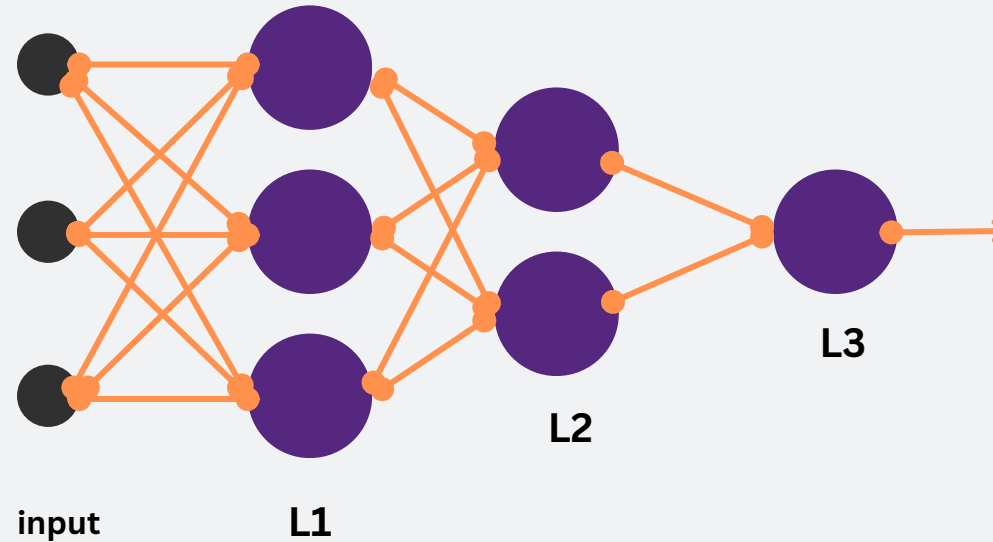## 800

1. **For the below feed-forward neural network architecture obtain the following variables:**

$O_1^1 = ?$

$O_2^2 = ?$

$O_1^3 = $ y_predicted $= ?$

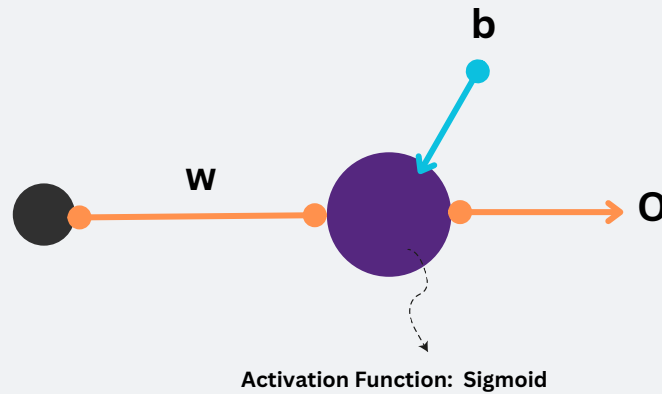input   **L1**   **L2**   **L3**

inputs	L1-Weights			L1-Biases	L2-Weights			L2-Biases	L3-Weights		L3-Biases
0.3	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.5	0.1	0.5
0.5	0.4	0.1	0.2	0.2	0.4	0.1	0.2	0.4			
0.8	0.2	0.3	0.1	0.1							

Activation Functions:

L1: Relu

L2: Tanh

L3: Sigmoid

400

2. Obtain new value of weight and bias after Gradient descent first iteration, use MSE as a loss function.

x	y
1.3	2.7
2.1	4.5
7.6	14.9

b

w

O

Activation Function: Sigmoid

Initial weight value(weight have been initialized randomly) : 1.5

Initial bias value (weight have been initialized randomly) : 0.5

learning rate (alpha) = 0.1

400