

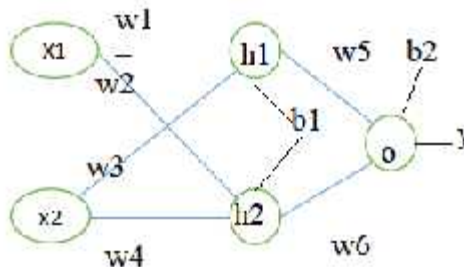
## **ARTIFICIAL NEURAL NETWORKS (CSM)**

### **UNIT-3: Single Layer Perceptron**

1. Explain about learning rules in ANN.
2. Explain about Gradient descent algorithm.
3. Differentiate Gradient descent and stochastic gradient descent algorithms.
4. Analyze the importance of optimizers in ANN training process.
5. Develop a python program to implement classification using perceptron?

### **UNIT-4: Multilayer Perceptron**

1. Analyze the training algorithm and its derivation for weight updates in back propagation networks?
2. Identify various practical and design issues of back propagation learning?  
Identify the role of hidden layers in artificial neural networks?
3. Develop a program to implement Back propagation algorithm using python.  
Develop a program to implement multilayer perceptron using scikit-learn
4. Analyze the MLP architecture and identify the functionality of neurons in different layers.
5. Identify the updated weights for weights associated with output neuron?  
 $X_1=0.19, x_2=0.8, w_1=0.19, w_2=0.51, w_3=0.7, w_4=0.45, w_5=0.15, w_6=0.72, y=1.9, b_1=0.13,$   
 $b_2=0.012, \text{learning rate}=0.01$



### **UNIT-5: Linear, Logistic regression and Classification**

1. Explain about RBF networks in Detail.
2. Develop a python program to implement a neural network for solving regression problem.
3. Outline various types of regression techniques.
4. Develop mathematical representations for various types of regression.
5. "Is a Radial basis function network solve non linear problems"? If yes justify your answer with suitable examples?
6. Implementation of classification using ANN with scikit-learn on IRIS dataset.