**ML Lab (CS360)**

**Assignment 10**

**Total Marks: 30**

**Submission date: 02/11/2023**

1. Implement the single layer perceptron (SLP) for the OR and AND problem using your own code (do not use the inbuilt functions). Use the perceptron learning rule for weight updation.

Marks: 10

Consider the following:

* 1. Train the model for different learning rates (LR), where 0<LR<1. Train for 5 different learning rates and plot the training curve (epoch vs training accuracy).
  2. Weight initialization should be between -0.3 to 0.3
  3. Activation is threshold activation such that:

F(x)=

1. Implement a multilayer feedforward neural network considering the following specifications:
2. Generate 1000 random data samples with 5 features and 2 classes that are not linearly separable. (5)
3. Write from scratch a feedforward neural network. (10)
4. Implement the forward pass of the neural network on the generated data and calculate the cross entropy loss.       (5)

Consider Activation function: sigmoid