**SL2 Practical’s List for PR Exam:**

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| **Group A** |
| 1. Write a Python program to plot a few activation functions that are being used in neural networks. |
| 2. Generate ANDNOT function using McCulloch-Pitts neural net by a python program. |
| 3. Write a Python Program using Perceptron Neural Network to recognise even and odd numbers. Given numbers are in ASCII form 0 to 9 |
| 4. With a suitable example demonstrate the perceptron learning law with its decision regions using python. Give the output in graphical form. |
| 5. Write a python Program for Bidirectional Associative Memory with two pairs of vectors. |
| 6. Implement Artificial Neural Network training process in Python by using Forward Propagation, Back Propagation. |
| 7. Create a Neural network architecture from scratch in Python and use it to do multi-class classification on any data.  Parameters to be considered while creating the neural network from scratch are specified as:  (1) No of hidden layers : 1 or more  (2) No. of neurons in hidden layer: 100  (3) Non-linearity in the layer : Relu  (4) Use more than 1 neuron in the output layer. Use a suitable threshold value  Use appropriate Optimisation algorithm |
| **Group B (Any 4)** |
| 1. Write a python program to show Back Propagation Network for XOR function with Binary Input and Output |
| 2. Write a python program to illustrate ART neural network. |
| 3. Write a python program in python program for creating a Back Propagation Feed-forward neural network |
| 4. Write a python program to design a Hopfield Network which stores 4 vectors |
| 5. Write Python program to implement CNN object detection. Discuss numerous performance evaluation metrics for evaluating the object detecting algorithms' performance. |
| **Group C (Any 3)** |
| 1. How to Train a Neural Network with TensorFlow/Pytorch and evaluation of logistic regression using tensorflow |
| 2. TensorFlow/Pytorch implementation of CNN |
| 3. MNIST Handwritten Character Detection using PyTorch, Keras and Tensorflow |