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| **Pb. No.** | **Name of the Problem** | **Page No.** |
| 01 | Write a MATLAB or Python program using perceptron net for AND function with bipolar inputs and targets. The convergence curves and the decision boundary lines are also shown. |  |
| 02 | Generate the XOR function using the McCulloch-Pitts neuron by writing an M-file or.py file. The convergence curves and the decision boundary lines are also shown. |  |
| 03 | Implement the SGD Method using Delta learning rule for following input-target sets. = [ 0 0 1; 0 1 1;1 0 1; 1 1 1], = [ 0; 0; 1; 1] |  |
| 04 | Compare the performance of SGD and the Batch method using the delta learning rule. |  |
| 05 | Write a MATLAB or Python program to recognize the image of digits. The input images are five by-five pixel squares, which display five numbers from 1 to 5, as shown in Figure 1.    ***Figure 1:*** Five-by-five pixel squares that display five numbers from 1 to 5 |  |
| 06 | Write a MATLAB or Python program to classify face/fruit/bird using Convolution Neural Network (CNN). |  |
| 07 | Consider an artificial neural network (ANN) with three layers given below. Write a MATLAB or Python program to learn this network using Back Propagation Network. |  |
| 08 | Write a MATLAB or Python program to recognize the numbers 1 to 4 from speech signal using artificial neural network (ANN). |  |
| 09 | Write a MATLAB or Python program to Purchase Classification Prediction using SVM. |  |
| 10 | Write a MATLAB or Python program to reduce dimensions of a dataset into a new coordinate system using PCA algorithm. |  |