



Dept. of Computer Engineering
First Exam, Second Semester: 2006/2007

Course Title: Neural Networks & Fuzzy Logic	Date: 15/4/2007
Course No: (630551)	Time Allowed: 1 Hour
Lecturer: Dr. Mohammed Mahdi	No. of Pages: 1

Question 1: (7 Marks)

Objectives:

This question is about Kohonen neural network.

An SOFM network with two input units and two cluster units is to be trained using the two vectors $v_1 = [0.9 \ 0.7]$ and $v_2 = [0.8 \ 0.4]$ in order. Taking initial weights:

0.5	0.3
0.4	0.2

With initial radius = 0, and learning rate = 0.3.

Calculate the weight changes during the first cycle through the data. What conclusion can you make?

Question 2: (7 Marks)

Objectives:

This question is about the basic concepts of ANN's.

Answer with Yes or No giving the reason.

- Steepness and threshold can take zero values.
- Underlying problem imposed the kind of NN learning.
- Winner-take-all criterion is better than EBP.
- MLP can be used only as a classifier.
- Network size problem does not exist in SOFM.
- Fault tolerance feature related only to MLP NN.
- Stability in MLP NN depends on the kind of the activation function.

Question 3: (6 Marks)

Objectives:

This question is about MLP NN.

Giving the following pattern, it is required to answer the following: -

- Suggest a suitable MLP NN topology.
- Write down the weights update equation.
- If the alphabetic letters from A to Z are to be trained, what you should think about?
- Does the generalization feature work here?

