Philadelphia University **Student Name:**

Faculty of Engineering **Student Number:**

Dept. of Computer Engineering
First Exam, First Semester: 2010/2011

Course Title: Neural Networks & Fuzzy Logic	**Date: 25/11/2010**
Course No: (630551)	**Time Allowed: 1 Hour**
Lecturer: Dr. Mohammed Mahdi	**No. of Pages: 1**

Question 1: ***(10 Marks)***

Objectives:
This question is about the basic concepts of ANNs.

Answer with YES or NO giving reasons: -

1. ANNs learning is always supervised.

2. The synapse in biological neuron is the same to the weight connections in ANNs.

3. Learning rate value in EBP algorithm should always take a value of 1.0.

4. The hidden layer in MLP NN can be named as an associative layer.

5. Bias of (-1 or +1) value without weight can be used to enhance learning in MLP.

6. Recurrent NN has feedback connections.

7. MLP NN can be used as a classifier and as a predictor.

8. NN Learning of a gray level image has the same complexity of learning a colored one.

9. SOFM NN learning is classified as a binary input with supervised learning.

10. The output layer in BNN has always linear property.

Question 2: ***(5 Marks)***

Objectives:
This question is about SOFM NN learning and MLP activation function.

A) Write down the SOFM algorithmic steps. When does the HALT condition come true? Prove it mathematically.

B) Taking the tansh activation function, it is required to sketch its characteristics, derive and sketch its derivative, then explain how and why we use its derivative in EBP NN.