

**Zarka Private University**  
**Faculty of Science - Department of Computer Science**  
**First Examination – Second Semester 2002 - 2003**  
**Neural Networks 0306483**

**Date: ?? May 2003**

**Time: 1 Hour**

**Q1) [7 Marks]**

Consider a discrete Hopfield memory with five neurons.

**A-** Find the weight matrix to store the following two vectors.

$(1 \ 1 \ 1 \ 1 \ 1)$ ,  $(1 \ 1 \ -1 \ -1 \ 1)$

**B-** Draw the network.

**C-** Test the network using the vector  $(1 \ 1 \ 1 \ 1 \ -1)$ .

**Q2) [8 Marks]**

Consider a BAM with 4 X-layer units and 2 Y-layer units.

**A-** Find the weight matrix to store the following associations:

S	T
1 0 0 0	1 0
1 1 0 0	1 0
0 0 0 1	0 1

**B-** Apply the input vector  $(0 \ 0 \ 1 \ 1)$  to the network.

**Good Luck**