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Total No. of Pages: 02
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M. Tech. (ECE) (Sem.-1st)
NEURAL NETWORK & FUZZY LOGICS
**Subject Code: EC-505**
Paper ID: [E0497]

Time: 3 Hrs.

Max. Marks: 100

INSTRUCTIONS TO CANDIDATES:

1. *Attempt any FIVE questions out of EIGHT questions*
2. *Each question carry TWENTY marks*

1. a) Discuss model of neuron.

   b) What do you mean by learning of neural network? Discuss types of learning algorithm.

2. a) Design OR gate using neural network.

   b) Discuss counter propagation network.

3. a) Discuss Hop field model.

   b) Derive the back propagation training algorithm for the neurons in the hidden layer using log-sigmoidal function. Output layer also have log-sigmoidal function.

4. a) Find out the derivative of tan-sigmoidal function.

   b) Discuss different architectures of neural network.

5. Update the weights of neural network using back propagation algorithm. Activation function of neuron is log-sigmoidal. Figure shown below:
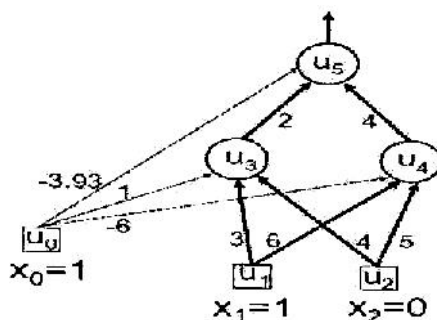
6. a) Can XOR gate design using single neuron? If yes, then design XOR gate if not, then explain,

   b) Discuss basic concept of fuzzy logic.

7.   a)   Find out the output of neural network shown in figure below:

Wl=l, W2=2, W3=3, W4=4 ,W5=5,W6=6
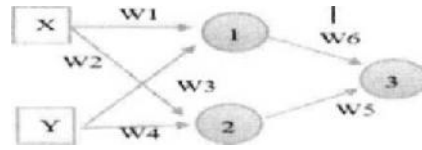
Neural (1) & (2) activation function is Log- sigmoidal, neural (3)

Activation function is Purlin.

b) Discuss application of neural network such as pattern recognition and   optimization.

8.   What is important consideration for fuzzy system design? Develop the logic for fuzzy based air conditioner.

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