Roll No. ..... Total Pages : 2

BT-8/D-17 **38001**

NEURAL NETWORKS AND FUZZY LOGIC

Paper – CSE-402

Opt. NN & FL

Time : Three Hours] [Maximum Marks : 100

Note : Attempt *five* questions in all, selecting at least *one* question from each Unit.

UNIT–I

1. (a) What are the basic building blocks of an artificial neural network ? 10

(b) What is the significance of activation function in neural network ? Also tell about the importance of bias. 10

2. (a) Explain the architecture of the perceptron net used for pattern classification. 10

(b) Briefly discuss on the learning rule of a perceptron network. Explain the algorithm used for training the perceptron net.

UNIT–II

3. (a) How is the error back propagated in BPN ? What is the activation function used in a back propagation net ? 10

(b) Why sigmoidal activations are used in BPN ? 10

4. (a) Full Counter Propagation Neural net is more efficient than forward only counter propagation neural net. Justify. 10

(b) State the training and application algorithm used for forward only counter propagation neural net. 10

UNIT–III

5. (a) Differentiate between continuous BAM and discrete BAM. 10

(b) How is the energy function defined for a BAM net ? What are the activations used in a BAM network ? 10

6. (a) What are the two forms of ART network ? Explain in detail. 10

(b) Explain the architecture of ART 1 network. State in detail computational and Supplemental units. 10

UNIT–IV

7. (a) Explain the structure and training procedure of the cognitrons. 15

(b) What are the advantages of optical neural networks ? 5

8. (a) What are the types of optical neural networks ? How are electro-optical matrix multipliers used to achieve more speed of operation ? 10

(b) Discuss optical hopfield net using volume holograms. 10