

Roll No. ....

Total Pages : 2

**BT-8/M-20**

**38153**

**NEURAL NETWORKS AND FUZZY LOGIC**

Paper–CSE-402N

Time Allowed : 3 Hours]

[Maximum Marks : 75

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

**UNIT-I**

1. What are the various active building blocks of Neural networks? Explain the current mirror and inverter based neuron in detail. 15
2. Distinguish between the feed forward and feedback Neural networks. Compare their input-output mapping. 15

**UNIT-II**

3. Construct a Hopfield network to associate 3×3 input images with dots and dashes. How many spurious attractors does this network have i.e. how many patterns other than dots and dashes are stable attractors? 15

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**P. T. O.**

4. What is Backpropagation? With a schematic two-layer feed forward neural network, derive its learning algorithm. Also discuss its learning difficulties and improvements. 15

### UNIT-III

5. What is holographic correlator? Also explain Hopfield net using volume holograms. 15
6. Explain the following :
- (a) Vector matrix multiplier.
  - (b) Hopfield net using Electro-optical matrix multipliers. 7+8

### UNIT-IV

7. Explain various operations on Fuzzy sets. 15
8. Describe features of Genetic algorithm. Also define the terms chromosome, fitness function, crossover and mutation as used in genetic algorithms. 15