

Roll No.

Total Pages : 3

Exam. Code
6028

8901

BT-8/M-11

NEURAL NETWORKS AND FUZZY LOGIC

Paper : CSE-402

Time : Three Hours]

[Maximum Marks : 100

Note : Attempt any *five* questions.

UNIT-I

1. (a) Describe various advantages and applications of Neural networks. 10
- (b) Explain the following terms in the context of Neural networks : 10
 - (i) Synapses.
 - (ii) Activation function.
 - (iii) Activation potential.
 - (iv) Generalization.
2. (a) Differentiate between Delta learning rule and Perceptron learning rule for a feedforward network. 10
- (b) With the help of an example, explain how the classification of linearly non-separable input data points is made possible by multilayer perceptron network. 10

UNIT-II

3. (a) Draw the architectural graph of the Hopfield network and explain the operational procedure in summarized form. 10

8901/2600/KD/79

J.P.T.G.

[Download all Notes and papers from S](#)

- (b) Describe the Self-organizing feature-mapping (SOFM) algorithm to adaptively transform an incoming signal pattern of arbitrary dimension in to a discrete map. 10
4. (a) Describe the Backpropagation method for the training of multilayer feedforward networks in algorithmic form. 10
- (b) Explain how the number of parameters in a neural network structure affects the following : 10
- (i) Generalization.
 - (ii) Computational complexity.
 - (iii) MSE.
 - (iv) Speed of convergence.

UNIT-III

5. (a) What is an Auto associative net ? State the application algorithm of an auto associative net. 10
- (b) Differentiate between continuous Bi-directional Associative Memory (BAM) and discrete BAM and state the algorithm of a discrete BAM. 10
6. (a) Explain the basic concept behind Adaptive Resonance Theory (ART). How is an ART net designed for both stability and plasticity ? 10
- (b) Describe the architecture of ART1 network. State in detail the computational and supplemental units. 10

UNIT-IV

7. (a) Explain the advantages of Implementation of neural networks with optical components. 10
- (b) Write a technical note on Optical Hopfield net using volume holograms. 10
8. Explain any *two* of the following :
- (a) Main operators of Genetic algorithms.
- (b) Structure and training of Cognitrons.
- (c) Application of Neocognitrons for pattern recognition. 10+10
-