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Printed Pages : 2

**8801**

**BT-8 / M12**

**NEURAL NETWORKS AND FUZZY LOGIC**

**Paper–CSE-402**

*Time allowed : 3 hours]* *[Maximum marks : 100*

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

**Unit–I**

1. Briefly discuss about linear separability and the solution for EX-OR problem. Also suggest a network that can solve EX-OR problem.

2. Differentiate between following :
   (a) Biological neuron and artificial neuron
   (b) Single-layer and multi-layer neural network.

**Unit–II**

3. How pattern mode and batch mode of training affect the result of back-propagation learning ? What is the significance of momentum term in back-propagation learning ? Discuss.

4. Explain the architecture and training of Kohonen's self-organizing network. Discuss the application of Kohonens networks in image processing.

## Unit–III

5. What is the function of ART network and explain its operation with relevant equations. Also discuss in detail the use of ART network in image processing.

6. (a) What is BAM ? Discuss its structure.

   (b) Explain the major phases involved in the ART classification process.

## Unit–IV

7. (a) Discuss in detail about the biological process of natural evolution. Write a note on the selection process of genetic algorithm.

   (b) What is mutation ? What is the objective of using mutation ?

8. Write short notes on following :

   (a) Vector matrix multiplier

   (b) Cognitrons.