

**FACULTY OF ENGINEERING**

B.E. 4/4 (CSE) II-Semester (Main) Examination, May / June 2012

Subject : **Soft Computing**  
(Elective-II)

Time : 3 Hours

Max. Marks: 75

**Note:** Answer **all** questions of Part - A and answer any **five** questions from Part-B.**PART – A (25 Marks)**

1. State the characteristics of an artificial neural network. (2)
2. Differentiate between supervised and unsupervised learning. (3)
3. Define bias and Threshold. (2)
4. List the limitations of perceptron. (2)
5. What is meant by Gradient descent method? (2)
6. What is a BAM network? (3)
7. Define membership function and state its importance in Fuzzy Logic. (3)
8. Define defuzzification. (2)
9. What is meant by Genetic Algorithm? (3)
10. State the importance of fuzzy arithmetic. (3)

**PART – B (5x10=50 Marks)**

- 11.(a) Why is the McCulloch-Pitts neuron widely used in logic functions? (4)  
(b) Implement AND operation using M-P neuron. (6)
12. Explain the training algorithm of Back propagation network. (10)
13. State the testing algorithm used in Discrete Hopfield network. (10)
- 14.(a) Define Euclidean distance. (3)  
(b) Explain the training algorithm used in ART network. (7)
- 15.(a) Define classical relation and fuzzy relation. (4)  
(b) Describe how neural network is used to obtain fuzzy membership functions. (6)
16. What are the various types of cross over and mutation techniques? (10)
17. Write short notes on the following : (5+5)  
(a) Fuzzy ordering  
(b) Applications of Genetic Algorithm