

## FACULTY OF ENGINEERING

**B.E. 4 / 4 (EEE / Inst.) II – Semester (Main) Examination, May / June 2011**

**Subject: Soft Computing (Elective – III)**

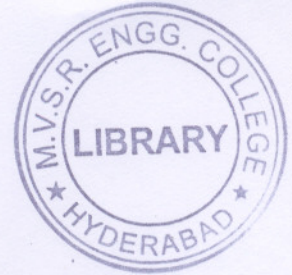
**Time: 3 Hours**

**Max. Marks: 75**

**Note:** Answer all questions from Part A. Answer any Five questions from Part B.

### PART – A (25 Marks)

- |   |   |
|---|---|
| 1. Differentiate between biological neuron and artificial neuron. | 3 |
| 2. Define linear separability.                                    | 2 |
| 3. What is a sigmoid function?                                    | 2 |
| 4. What is a single layer perceptron?                             | 3 |
| 5. What is a local minima faced by back propagation learning?     | 2 |
| 6. Compare auto-association and hetro-association.                | 3 |
| 7. Discuss self-organizing network model.                         | 3 |
| 8. Give the importance of membership function in fuzzy logic.     | 3 |
| 9. What is a Genetic algorithm?                                   | 2 |
| 10. State the importance of fuzzy arithmetic.                     | 2 |



### PART – B (50 Marks)

- |   |    |
|---|----|
| 11. Explain the MaCulloch-Pitts neuron model and implement OR function.         | 10 |
| 12. Explain the steps used in the implementation of Back Propagation Network.   | 10 |
| 13.(a) Mention the components of ART Network.                                   | 5  |
| (b) Explain the model of ANALINE, network.                                      | 5  |
| 14. Explain the training algorithm used in Hopfield network.                    | 10 |
| 15. Describe how a neural network is used to obtain Fuzzy membership functions. | 10 |
| 16.(a) Explain simple genetic algorithm.  | 5  |
| (b) Explain Different Cross over techniques.                                    | 6  |
| 17. Write short notes on the following:   |    |
| a) Neural network applications.   | 5  |
| b) Fuzzy ordering.  | 5  |