Code No. 3197

# 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 |