

Code: CS5T4

**III B.Tech - I Semester – Regular/Supplementary Examinations
October 2019**

**SOFT COMPUTING
(COMPUTER SCIENCE AND ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks
11x 2 = 22 M

1. a) How is a fuzzy set denote mathematically?
- b) What are the properties of fuzzy sets?
- c) What is the difference between fuzzy set and crisp set?
- d) How do you write a predicate in logic?
- e) What is the difference between propositional logic and predicate logic?
- f) State the single layer feedforward neural network.
- g) What is Backpropagation in machine learning?
- h) Define the associative memory in neural network.
- i) State the term vector quantization.
- j) How can we solve the problem of genetic algorithm?
- k) What is hybrid system in soft computing?

PART – B

Answer any **THREE** questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) Give the properties of fuzzy sets and also explain operations involved in it. 8 M
- b) Explain the Crisp Relation with suitable example. 8 M
3. a) Differentiate between Predicate logic and Fuzzy Logic. 8 M
- b) Explain different defuzzification method with an example. 8 M
4. a) With an example, explain the procedure of a single discrete perceptron in classifying a linearly separable problem. 8 M
- b) What is activation function? When a sigmoidal function is used? 8 M
5. a) Explain architecture of Bidirectional Associative Memory (BAM). How storage and retrieval performed in BAM. 8 M
- b) Write about learning vector quantization and its algorithm. 8 M
6. a) What do you understand by Tournament Selection? How does it overcome the demerit of Roulette Wheel Selection method ? 8 M
- b) Define cross over. Explain about uniform cross over and multi-point cross over. 8 M