PVP 14

Code: CS5T4

III B.Tech - I Semester – Regular/Supplementary Examinations
October 2017

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) List any four techniques used in soft computing.
b) What is a fuzzy number?
c) What is meant by dilemma between interpretability and precision?
d) How would you classify the Fuzzy Quantifiers and their classes?
e) How do neural networks work?
f) Define Adaptive Networks.
g) What is Auto associative net?
h) What is the activation unit x_i at time t of Mexican cat?
i) Why do we use a mutation in genetic algorithm?
j) Draw any binary and real valued chromosome in a genetic algorithm.
k) Explain the projection operations on fuzzy relation with example.

PART – B

Answer any ***THREE*** questions. All questions carry equal marks.
3 x 16 = 48 M

2. Explain Fuzzy and Crisp Relations with operations and examples. 16 M

3. Define Fuzzy Inference Systems? What are the different models? 16 M

4. Define neural network. Explain different architectures with neat diagrams. 16 M

5. a) How would you show your understanding about the architecture of BAM? 8 M

   b) Illustrate the architecture and features of ART1. 8 M

6. A budget airline company operates 3 planes and employs 5 cabin crews. Only one crew can operate on any plane on a single day, and each crew cannot work for more than two days in a row. The company uses all planes every day. A Genetic Algorithm is used to work out the best combination of crews on any particular day.
   a) Suggest what chromosome could represent an individual in this algorithm? 5 M

b) Suggest what could be the alphabet of this algorithm? What is its size? 5 M

c) How many solutions are in this problem? Is it necessary to use Genetic Algorithms for solving it? What if the company operated more planes and employed more crews? 6 M