Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

MCTA-201

M.E./M.Tech., II Semester

Examination, June 2017

Soft Computing

Time : Three Hours

Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. a) Explain Backpropagation neural network. State when BPN struck into local minima? Also, give some methods to overcome this problem.
   b) What is linear separability? Justify why XOR is non linear and AND and OR gates are linear separable?

2. a) Differentiate the following:
      i) Biological Neuron Vs Artificial Neuron
      ii) Supervised learning Vs Unsupervised learning
   b) Draw the architecture of Kohonen's self organizing networks? Explain its training and working.

3. a) Describe a rule based system. Explain its components and state how conflict resolution is carried out?
   b) Define the following:
      i) Linguistic variables
      ii) Linguistic hedges
      iii) Fuzzification
      iv) Fuzzy propositions

4. a) What is genetic algorithm? Explain generic cycle of GA.
   b) Explain the concept of crossover in GA. What are different operators used for crossover?

5. a) What is clustering? Give comparative analysis of different types of data clustering algorithm.
   b) Briefly explain Adaptive network based fuzzy inference systems.

6. a) Explain what is Best first search by taking suitable example.
   b) Write unification algorithm. Explain the process of resolution in predicate calculus.

7. a) Give an overview of a MATLAB toolbox.
   b) What is Soft computing? How it is different from hard computing? Also state its applications.

8. Write short note on the following (any three) :
   a) Hopefield network
   b) Simulated annealing
   c) Fuzzy automata and languages
   d) Semantic networks
   e) Reproduction in GA

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