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Roll No .....

MCTA-201

M.E./M.Tech., II Semester Examination, June 2020

Soft Computing

Time : Three Hours

Maximum Marks : 70

Note : i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) With suitable diagram, derive the weight update equations in back propagation algorithm for a multilayer feed forward neural networks and explain the effect of learning rate, and momentum terms or weight update equations.
   b) Discuss algorithm for storage of confirmation in Hopfield network. Explain recall algorithm.

2. a) State the applications of Kohonen's Self organizing maps.
   b) Differentiate between:
      i) Supervised Vs unsupervised learning
      ii) Biological Vs Artificial Neuron

3. a) Explain perceptron network training with and without bias by taking suitable example.
   b) Define membership function and its importance in fuzzy logic.

4. a) What are crisp relations? How are they different from fuzzy relation? Explain various properties of crisp relation and fuzzy relation.
   b) Explain the following terms:
      i) Fuzzy automata and languages
      ii) Fuzzy matrices.

5. a) Explain with the help of an example the concept of simple fuzzy logic controllers.
   b) Explain travelling salesman problem using simulated annealing.

6. a) Explain k-mean and hierarchical clustering algorithm with example.
   b) Explain various operator and parameter of Genetic Algorithm.

7. a) What are basic operations done on vector in MATLAB?
   b) Explain various types of crossover and mutation techniques.

8. a) How semantic network is related to syntax associative network?
   b) Write short notes (Any two)
      i) Rules of inference
      ii) Predicate calculus
      iii) A* Algorithm

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