

MCSE-205
M.E./M.Tech., II Semester

Examination, December 2014

Soft Computing

Time : Three Hours

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Maximum Marks : 70

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

1. a) What are the main components of soft computing? Compare hard computing and soft computing.
b) Explain best- first search technique along with its algorithm. What are advantages and drawback of best- first search? RGPVONLINE.COM
2. a) Explain hill climbing algorithm by considering suitable examples.
b) Differentiate between the following:
i) Monotonic and non monotonic reasoning.
ii) Forward and backward reasoning.
3. a) Explain the Mcculloch Pitts model of neural network. Differentiate the structure and functions of a biological neuron and artificial neuron. List the similarities and dissimilarities of BNN and ANN.
b) Write and explain the perceptron learning algorithm. Give the comparison between the radial basis function network and multilayer preceptron.

4. a) Describe the architecture, functions and characteristics of counter propagation network. How CPN network is different from ART?
b) Explain how Boltzmann Machine can be used to overcome the problem associated with Hopfield network.
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5. a) Draw the Architecture of back propagation network. Explain its training algorithm with suitable example.
b) What are the merits of Kohonen self organizing map. Explain the various techniques used to initialize weight vector during the training of a Kohonen layer.
6. a) Define Fuzzy relation and max-min composition of Fuzzy relations. Explain the various membership functions used in Fuzzy systems. RGPVONLINE.COM
b) What do you mean by Fuzzification and Defuzzification? Explain center of area method of defuzzification.
7. a) Define Fuzzy proposition and logical connectives on Fuzzy propositions. Explain Fuzzy if- then rule and composition rule of inference for a Fuzzy system.
b) What are genetic algorithms? Describe differences and similarities between genetic algorithm and other traditional methods.
8. a) What do you mean by cross over and mutation? Explain different types of cross over and mutation techniques.
b) How travelling salesman problem optimize using genetic algorithm? Explain.