Code No: G5609/R13

M. Tech. I Semester Supplementary Examinations, January-2017

ARTIFICIAL INTELLIGENCE TECHNIQUES

(Common to HVE, HVPS, PS, PSC&A, EPE, EPS, PS&C, and APS)

Time: 3 hours **Max. Marks: 60**

Answer any FIVE Questions
All Questions Carry Equal Marks

1. a Differentiate between supervised and unsupervised learning rule. [6]
   b How do you justify that brain is a parallel distributed processing system? [6]

2. Explain the step by step procedure involved in classification and training of patterns using [12]
   (a) Continuous perceptron algorithm.
   (b) Multicategory single layer perceptron.

3. Using back propagation learning, find the new weights for the network shown in Figure.1, when presented with an input (0,1) and the target output is 1. Use a learning rate of α=0.5 and the binary sigmoid activation function. [12]

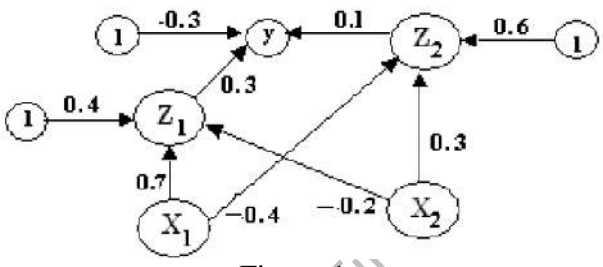

Figure.1

4. a Write approximation properties of radial basis function network. [6]
   b Write about generalized radial basis networks. [6]

5. a Why reproduction operator is sometimes known as the selection operator? [4]
   b Explain generation cycle of the genetic algorithm with a population of four strings with 10 bits each. [8]

6. a List the main components of fuzzy logic controller. Explain each of them. [8]
   b Discuss about the fuzzy relations with examples. [4]

7. a Describe the membership value assignment. [6]
   b Write the properties of fuzzy sets. [6]

8. a How do you control the reactive power in power system using genetic algorithm? [6]
   b How can an Artificial Neural Network be applied in load frequency control? [6]

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