

218
Seventh Semester Examination – 2007

SOFT COMPUTING

Full Marks – 70

Time – 3 Hours

IWL

Answer Question No. 1 which is compulsory
and any five from the rest.

The figures in the right-hand margin
indicate marks.

1. Answer the following questions : 2 x 10
- (i) Define soft computing.
 - (ii) What are different learning paradigms ?
 - (iii) What is an activation function ?

(iv) State different de-fuzzification techniques.

(v) What are genetic algorithms ?

(vi) What do you mean by a Hybrid System ?

(vii) What is an auto associative network ?

(viii) What are the advantages of neural networks over conventional computers ?

(ix) What is the main difference between probability and fuzzy logic ?

(x) Write down the energy function of a discrete Hopfield net.

2. (i) Distinguish between a feedforward network and a recurrent network. 5

(ii) Draw the weight matrix for a feedforward network, showing the partitioning. You can assume that the weight matrix for connections from the input layer to the

hidden layer is W_{ih} , and that the weight matrix for connections from the hidden layer to the output layer is W_{ho} . 5

3. What is neural network ? Elaborate on the features of neural network that help to solve complex problems. 10

4. With the help of a suitable example show how a MLP can be used to provide non-linear decision boundary in Pattern Classification. 10

5. Explain the structure and characteristics of rule base expert systems. Also explain the conflict resolution mechanism. 10

6. Explain genetic operators and fitness function in respect of evolutionary computing. 10

7. List and analyze different training methods employed in RBF networks. 10

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8 Write short notes on :

2.5

- (i) Learning Methods
- (ii) MLP
- (iii) RBF networks
- (iv) ANFIS.

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