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EOE – 031/EOE – 041

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0935 Roll No.

B.Tech.

(SEM IV) EVEN SEMESTER THEORY EXAMINATION, 2009-2010

INTRODUCTION TO SOFT COMPUTING (NEURAL NETWORKS, FUZZY LOGIC AND GENETIC ALGORITHM)

Time : 3 Hours *Total Marks : 100*

Note : *(i) Attempt **all** questions.*

*(ii) All questions carries **equal** marks.*

1. Attempt **any four** parts :

(a) Define Neural Network Architecture.

(b) Give a comparison between Single layer Feed Forward Network, Multi-layer Feed Forward Network and Recurrent Network.

(c) Discuss any three learning methods.

(d) What is Rosenblatt's Perceptron ?

(e) Artificial Intelligence can be used in Neural Networks or not. Justify your answer.

(f) Define Associative Memory and write down its applications.

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2. Attempt **any four** parts :

(a) Define Single Layer Artificial Neural Network.

(b) What do you understand by the term 'training of Neural Network' ?

(c) Discuss "Selection of various parameter in BPN.

(d) What is adaptive Back Propagation ?

(e) How Tuning Parameters affect the Back Propagation Neural Network ?

(f) Define augmented BPN.

3. Attempt **any two** parts :

(a) What is Time dependent Fuzzy Logic ? Discuss in detail. How Crisp Logic is different from Fuzzy Logic define ?

(b) Define the following :

(i) Fuzzy to crisp conversion

(ii) Properties of Fuzzy sets

(iii) Linguistic variables

(c) Discuss Fuzzy Artificial Neural Network in detail. Write down its application.

4. Attempt **any two** parts :

(a) What is Fuzzy Quantifiers ? Discuss in detail. Differentiate between Absolute and Relative Quantifier. Also define Fuzzification.

(b) Define Membership function in detail. Also define its role and application.

 (c) Explain the following :

(i) Fuzzy interface

(ii) Formation of rule based Matrix

(iii) Yamakawa's Air Conditioner controller.

5. Attempt **any two** parts :

(a) Define creation of offsprings in detail. Also write down the working principle of GA and application of GA.

(b) Define the following :

(i) Fitness function

(ii) Genetic operator

(iii) Cross over

(c) Draw and discuss the Flowchart of GA. Also write down its importance.

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