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

PAPER ID : 0935 **Roll No.** | | | | | | | | | | |

B.Tech.

(SEM. III) ODD SEMESTER THEORY EXAMINATION 2013-14

INTRODUCTION TO SOFT COMPUTING
(Neural Networks, Fuzzy Logic and Genetic Algorithm)

Time : 3 Hours *Total Marks : 100*

Note :– Attempt **all** questions.

1. Attempt any **four** parts : **(4×5=20)**

   (a) What are the activation function ? Explain its use in neuron model.

   (b) What is hetro-associative memory ? Describe in context of neural network.

   (c) Draw a single layer feed forward network and explain its working functions.

   (d) How recurrent network work ? Compare with multilayer neural network.

   (e) Describe nerve structure and synapse in brief.

   (f) Discuss various learning techniques.

2. Attempt any **four** parts : **(4×5=20)**

(a) What is the Multilayer Perceptron Model ? Explain it.

(b) What are the back propagation learning methods ?

(c) Discuss the effect of learning rule co-efficient.

(d) What are the drawbacks of back propagation algorithms ?

(e) Draw neural network architecture and explain auto associative properties in it.

(f) Compare single layer and multilayer perceptron model.

3. Attempt any **two** parts : **(2×10=20)**

(a) Define fuzzy logic and its importance in our daily life. What is role of crisp sets in fuzzy logic ?

(b) What is fuzzy set theory ? Explain different fuzzy sets and its operations.

(c) Explain the following terms :

(i) Fuzzy Arithmetic

(ii) Fuzzy to crisp conversion

(iii) Fuzzy relations.

4. Attempt any **two** parts : **(2×10=20)**

(a) Explain membership function in fuzzy logic. What is the interference in fuzzy logic ?

(b) What are fuzzy implications ? Discuss the fuzzy controller.

(c) Define the following terms :

(i) Fuzzy algorithm

(ii) Fuzzyfication

(iii) Defuzzyfication

(iv) Fuzzy if then rules.

5. Attempt any **two** parts : **(2×10=20)**

(a) Explain genetic algorithm. Also draw and explain the flow chart of genetic algorithm.

(b) What are the mutation in GA ? Explain the generational cycle in GA.

(c) What are the Genetic Operators ? What is the roles of genetic operators in GA ?