Printed Pages : 3

EOE041

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

PAPER ID : 199407

Roll No.

B. Tech.

(SEM. IV) THEORY EXAMINATION, 2014-15

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

Time : 3 Hours] [Total Marks : 100

Note : Attempt all the questions. All questions carry equal marks.

1. Attempt any four parts of the following : 5×4=20

   (a) Discuss the analogy between biological and artificial neuron.

   (b) Discuss the various learning techniques in detail.

   (c) Is it possible to use Artificial Intelligence in Neural network? If yes give the proper justification.

   (d) Compare and contrast between the single layer. Feed Forward Network and Multilayer Feed Forward Network.

(e) How the soft computing differ from the hard computing? Also illustrate the applications of the soft computing.

(f) Compare and contrast between auto Associative Memory and hetro associative memory.

2. Attempt any four parts of the following : **5×4=20**

(a) How will you train the Artificial Neural Network? Give proper justification for that.

(b) Explain the factors which may affect the back propagation Neural Network.

(c) What do you mean by Recurrent Networks? Illustrate the pros and cons of such network.

(d) Briefly explain the Back propagation algorithm.

(e) Illustrate the application areas of Neural Networks in detail.

(f) Explain the effect of learning in Neural Network detail with the help of proper diagram.

3. Attempt any two parts of the following : **10×2=20**

(a) What is Fuzzy system? Compare and contrast between Fuzzy logic and crisp logic in detail with proper example.

(b) Explain the following:

(i) Application areas of fuzzy logic

(ii) Linguistic variables

(c) What is the role of Defuzzification? Explain the types of Defuzzification in detail.

4. Attempt any two parts of the following : **10×2=20**

(a) What is Fuzzy Quantifiers? Compare and contrast between absolute and relative quantifiers. Also illustrate Fuzzy Controller.

(b) Define membership function in detail. Also define its roles and applications.

(c) Explain the following.

(i) The Role of Fuzziness in Artificial Intelligence

(ii) Fuzzy Inference.

5. Attempt any two parts of the following : **10×2=20**

(a) Explain the creation of offspring's in detail with example. Also write down the working principle of Genetic algorithm and application of Genetic algorithm.

(b) Draw the Evolutionary Cycle diagram and explain each component in detail.

(c) Explain the following.

(i) Fitness Evaluation

(ii) Mutation.
