Roll No. | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(Electronics & Computer Engg.) (2011 Onwards) (Sem.–7,8)

COMPUTATIONAL INTELLIGENCE

Subject Code : BTEL-702

M.Code : 72171

Time : 3 Hrs. Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.**

SECTION-A

1. Write briefly :

a) What is Reinforcement Learning?

b) What are different ANN topologies?

c) Discuss few applications of fuzzy system design.

d) What is excluded middle layer in Fuzzy Sets?

e) Describe the name of the main features of Genetic Algorithm (GA).

f) What do you mean by fuzzification?

g) What is rule based programming?

h) What are the major blocks/layers of a counter propagation network?

i) What two requirements should a problem satisfy in order to be suitable for solving it by a GA?

j) List the various types of Membership functions.

SECTION-B

2. Describe Delta learning rule. How Widrow& Hoff LMS learning rule can be treated as a special case of Delta Rule?

3. Implement AND logical function using Perceptrons.

4. Termination criteria for a genetic algorithm brings the search to a halt. Explain the various termination techniques.

5. Illustrate the different steps in genetic-neuro hybrid systems with the help of neat diagram.

6. Distinguish between the processes of tuning and learning in genetic-fuzzy rule based system.

SECTION-C

7. Explain a model based fuzzy controller.

8. Explain Sugeno Inference technique.

9. Explain the back propagation algorithm for neural nets.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.