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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ECE) (2012 to 2017 E-II) (Sem.-7)

ARTIFICIAL INTELLIGENCE TECHNIQUES & APPLICATIONS

Subject Code : BTEC-911

M.Code : 71915

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS 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 have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A**1. Answer briefly :**

- (a) What is the difference between crisp value and fuzzy value?
- (b) Draw labeled diagram of biological neuron.
- (c) What does fuzzy membership signify and why does it lie between 0 and 1?
- (d) What are the four operations in fuzzy set theory?
- (e) What does bipolar and binary mean in neural network?
- (f) Give the architecture of Adaline.
- (g) What is the function of fuzzy inference system?
- (h) Explain the concept of crossover in GA.
- (i) List two supervised and unsupervised learning methods.
- (j) Fuzzy Set $A = [0.2 \ 0.5 \ 0.8 \ 0.4]$ and $B = [0.8 \ 0.4 \ 0.5 \ 0.1]$

Find $A \cup B$ and A / B

SECTION-B

2. Explain in detail the learning rules for neural networks. What is the significance of perceptron learning and delta learning?
3. With the help of venn diagram and suitable example, explain seven properties of fuzzy in fuzzy set theory.
4. What is the meaning of supervised learning and unsupervised learning of neural network? Explain.
5. Develop perceptron for AND function with bipolar input and bipolar target.
6. What is the need of :
 - (a) Associative memories
 - (b) Self organizing networks

SECTION-C

7. What are Genetic algorithms? Explain the functioning of GA. How the adjustment of strategy parameters like population size, mutation and crossover probabilities is done? Explain the travelling sales man route planning effectiveness with GA.
8. How artificial Neural network helps in forecasting the weather? What are different neural network models? Explain their architecture and mathematical modeling.
9. How fuzzy set theory differs from classical set theory? How fuzzy rules and membership are selected for controlling the temperature and humidity of an air conditioner?

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.