

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (ECE/CSE) (Sem.-7, 8)

SOFT COMPUTING

Subject Code : BTEC-908D-18

M.Code : 90681

Date of Examination : 22-05-2023

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. Write briefly :

- a) What is the principle of the center of gravity defuzzification method?
- b) State two features of the Ant colony algorithm.
- c) What are two point crossover methods?
- d) Differentiate soft computing and hard computing.
- e) Explain the fuzzy set and fuzzy operators in brief.
- f) Differentiate supervised and unsupervised learning.
- g) What is the principle of swarm intelligence optimization?
- h) Explain the role of rule base in fuzzy logic.
- i) Explain perceptron learning in a neural network.
- j) What is the Adaline network? Draw and explain.

SECTION-B

2. State and explain Hebb's learning rule for the neural network in detail.
3. Define activation function. Explain the purpose of activation function in multilayer neural networks with two examples.
4. What is the principle of swarm intelligence in Bee colony optimization? Explain it with a neat diagram.
5. Compare Mamdani and Sugeno fuzzy inference systems with the help of a suitable block diagram.
6. With a neat sketch, explain training and testing operation in a recurrent neural network.

SECTION-C

7. Explain the steps of a Genetic Algorithm to solve an optimization problem.
8. What is a self-organizing feature map? Also, discuss Kohonen's map and its features in detail.
9. Describe the modeling and implementation of a Fuzzy logic controller for a washing machine.

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.