

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 01

Total No. of Questions : 08

M.Tech. (CSE) (2020) (Sem.-2)

SOFT COMPUTING

Subject Code : MTCS-202-18

M.Code : 76056

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWELVE marks.

1. What is Artificial Neural Network? Explain appropriate problem for Neural Network Learning with its characteristics.
2. What are the properties which a fuzzy set A on R (set of real numbers) must possess to qualify as a fuzzy number? Explain any four arithmetic operations on closed interval with examples.
3. Write short note on :
 - a) ANFIS
 - b) Derivative free optimization
 - c) Mamdani Fuzzy Model
4. Write the Back Propagation Algorithms. Discuss the Convergence issues in the back propagation algorithms.
5. Why training algorithms are required? Explain Widrow and Hoff's learning rule.
6. Why do we use high crossover probability and low mutation probability in GA? What is advantage of GA over back propagation algorithm? The performance of GA depends on balance pressure and population density. Justify the statement.
7. What are different types of classifier evaluation techniques? What is social network analysis and how it is closely linked with hyperlink analysis?
8. Two Fuzzy Sets representing a plane and train image are :
Plane = (0.2/train + 0.5/bike + 0.3/boat + 0.8/plane + 0.1/house)
Train = (1/train + 0.2/bike + 0.4/boat + 0.5/plane + 0.2/house)
(a) Plane' (b) Train' (c) Plane | Train (d) Train \cap Plane (e) Train \cup Plane (f) Plane \cup Plane'

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.