

Reg. No. :

Name :

Eighth Semester B.Tech. Degree Examination, January 2018
(2013 Scheme)
(Elective – III)
13.804.1 : SOFT COMPUTING (FR)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions. **Each** question carries **4** marks.

1. Write short notes on Hebb network.
2. What is Linear separable problem ?
3. What are the properties of Fuzzy logic ?
4. List out the properties of membership functions.
5. Briefly explain messy genetic algorithm.

(5×4=20 Marks)

PART – B

Answer **any one** question from **each** Module.

Module – I

6. a) Explain the architecture of feedback neural network with its applications. **10**
- b) Write the limitations of Back propagation learning algorithm. **10**

OR

7. a) Describe Auto association and Hetero association memory networks. **10**
- b) Explain competitive neural network with its applications. **10**

Module – II

8. a) Explain Fuzzification and Defuzzification to crisp set with example. **10**
- b) List the four different operations on classical sets. Do fuzzy set follow the same properties as crisp set. **10**

OR

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9. a) What is the difference between similarity and possibility based approach of fuzzy databases ? What are the advantages and disadvantages of these approaches ? 10
- b) Explain about Fuzzy inference system. 10

Module – III

10. a) Describe the optimization of travelling salesman problem using genetic algorithm approach. 12
- b) Explain any four types of crossover operation in genetic algorithm. 8

OR

11. a) Explain about general genetic algorithm. 5
- b) Show the first 2 cycles of genetic evolution for optimizing the function $y = x^3$ in the interval of $0 < x < 12$. Use set $P = \{1100, 1010, 1011, 0011\}$ as initial population. 15

Module – IV

12. a) Explain about Soft Computing based rocket engine control. 10
- b) Describe Fuzzy-genetic hybrids. 10

OR

13. a) Discuss the role of fuzzy controllers in hybrid systems. 10
- b) Explain how neuro-fuzzy is different from neuro-genetic and fuzzy-genetic hybrids. 10
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