B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022

Sixth Semester

Electrical and Electronics Engineering

(Common to Electronics and Instrumentation Engineering)

EE8071 - APPLIED SOFT COMPUTING

(Regulations 2017)

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)
Answer ALL Questions

		Marks, K-Level, CO
1.	Mention various layers of neuron.	2,K1,CO1
2.	Define artificial neural networks. (ANN)	2,K1,CO1
3.	Illustrate the term weight learning?	2,K1,CO2
4.	State about Hopfield network.	2,K1,CO2
5.	Differentiate Classical set and Fuzzy set.	2,K1,CO3
6.	Name different defuzzification methods.	2,K1,CO3
7.	Write the basic elements of a fuzzy logic control system?	2,K1,CO4
8.	List some of the applications of fuzzy logic control systems.	2,K1,CO4
9.	Define cross over rate?	2,K1,CO5
10.	Mention any two advantages of Neuro fuzzy logic controller	2,K1,CO5

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11. a) (i) Explain in detail single layer and multi layer feed forward network. — 7,K2,CO1
    (ii) Discuss in detail supervised and un-supervised learning algorithm. — 6,K2, CO1
    OR
    b) Describe in detail about ADALINE and MADALINE. — 13, K2,CO1

12. a) (i) State continuous Hop field network. — 3, K1,CO2
    (ii) Obtain the transient response of Continuous hop field network. — 10, K2,CO2
    OR
    b) Explain in detail process identification and its types. — 13, K2,CO2

13. a) (i) Differentiate classical set and fuzzy set. — 2,K2,CO3
    (ii) Explain the operations of fuzzy set. — 6,K2,CO3
    (iii) Discuss the properties of fuzzy set. — 5,K2,CO3

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

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OR

b) (i) Define support and core of fuzzy subset with a diagram. *3, K1,CO3*
   (ii) Describe the process of Fuzzification and its types. *10,K2,CO3*

14. a) Explain with neat diagram along with the rules to solve the aircraft landing problem with fuzzy logic control. *13, K2,CO4*

OR

b) Design the FLC for PID controller with required controller tuning parameters. *13, K2,CO4*

15. a) Describe the application of Genetic Algorithm to Economic Dispatch Problem. *13, K2,CO5*

OR

b) Discuss the ant colony search technique in detail. *13, K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) (i) Explain in detail with neat diagram the Neuro fuzzy logic controller. *8,K2,CO6*
    (ii) Write and briefly discuss any one application of Neuro fuzzy logic controller. *7,K3,CO6*

OR

b) Explain briefly the adaptive fuzzy system with necessary diagram and mention the applications in which adaptive fuzzy system is employed. *15,K3,CO6*