Dr. A.P.J. Abdul Kalam Technical University (AKTU) · B.Tech Theory Examination

Application of Soft Computing

KCS-056 · 2023

Time: 3 Hours **Max. Marks: 100**

Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1(a)	What does convergence mean in neural networks?	2	U1
1(b)	Write down applications of Associative Memory.	2	U1
1(c)	What are the limitations of backpropagation algorithm?	2	U2
1(d)	Define Perceptron model.	2	U2
1(e)	What is fuzzy logic used for?	2	U3
1(f)	What are the operations of crisp set?	2	U3
1(g)	Where is fuzzy controller used?	2	U4
1(h)	Define Fuzzification.	2	U4
1(i)	Give few applications of genetic algorithm.	2	U5
1(j)	What are different operators in GA?	2	U5

SECTION B

2(a)	Write short notes on recurrent auto associative memory & explain its pros & cons.	10	U1
2(b)	How does Multilayer Perceptron work? What are the main problems with the back propagation learning algorithm?	10	U2
2(c)	Explain the different types of Operation used in Fuzzy Set with suitable examples.	10	U3
2(d)	Why is Defuzzification necessary? Explain different types of Defuzzification with suitable example.	10	U4
2(e)	State and explain the different selection methods in GA.	10	U5

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SECTION C

3(a)	What is an artificial neural network and explain its layer?	10	U1
3(b)	What is the synapse of a neuron? Draw and explain structure of a neuron.	10	U1
4(a)	What is single layer artificial neural network? What is a Perceptron model?	10	U2
4(b)	What is back propagation algorithm explain with example?	10	U2
5(a)	Explain fuzzy relationship. What is the difference between fuzzy logic and crisp logic?	10	U3
5(b)	What are the basic components of a fuzzy logic system? Explain.	10	U4
6(a)	What are the industrial applications of fuzzy logic?	10	U4
6(b)	What is fuzzy implication? What is fuzzy controller explain with real life example?	10	U4
7(a)	What is two point crossover and uniform crossover in genetic algorithm?	10	U5
7(b)	What is Genetic Algorithm? Explain the procedures of GA.	10	U5

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