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Paper Id: 231989

B.TECH (SEM V) THEORY EXAMINATION 2022-23 APPLICATION OF SOFT COMPUTING

Time: 3 Hours

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

SECTION A

1. Attempt *all* questions in brief.

- (a) What does convergence mean in neural networks?
- (b) Write down applications of Associative Memory.
- (c) What are the limitations of backpropagation algorithm?
- (d) Define Perceptron model.
- (e) What is fuzzy logic used for?
- (f) What are the operations of crisp set?
- (g) Where is fuzzy controller used?
- (h) Define Fuzzification.

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- (i) Give few applications of genetic algorithm.
- (j) What are different operators in GA?

SECTION B

2. Attempt any *three* of the following:

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

a next of the following

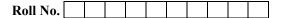
SECTION C

J.	What is an artificial neural network and evaluin its lever?	1011 - 10
(a)	What is an artificial neural network and explain its layer?	
(b)	What is the synapse of a neuron? Draw and explain structure of a neuron.	
4.	Attempt any <i>one</i> part of the following:	10x1 = 10
(a)	What is single layer artificial neural network? What is a Perceptron model?	
(b)	What is back propagation algorithm explain with example?	
5.	Attempt any one part of the following:	10x1 = 10
(a)	Explain fuzzy relationship. What is the difference between fuzzy logic and crisp logic?	
(b)	What are the basic components of a fuzzy logic system? Explain.	
6.	Attempt any one part of the following:	10x1 = 10
(a)	What are the industrial applications of fuzzy logic?	
(b)	What is fuzzy implication? What is fuzzy controller explain with real life example?	
7.	Attempt any one part of the following:	10x1 = 10
(a)	What is two point crossover and uniform crossover in genetic algorithm?	

(b) What is Genetic Algorithm? Explain the procedures of GA.

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 $2 \times 10 = 20$

Total Marks: 100

10x3 = 30

10v1 - 10