

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

Time: 3 Hours**Total Marks: 100****Note:** Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

- 1. Attempt all questions in brief.** **2 x 10 = 20**
- (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.
 - (i) Give few applications of genetic algorithm.
 - (j) What are different operators in GA?

SECTION B

- 2. Attempt any three of the following:** **10x3 = 30**
- (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.

SECTION C

- 3. Attempt any one part of the following:** **10x1 = 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 one 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.