

4297

**B.C.A. (II Sem.) Examination, 2024**

**Paper: IV**

**Introduction to Soft Computing**

*Time : Three Hours ]*

*[Maximum Marks : 75*

**Note:** Attempt any **five** questions. **All** questions carry equal marks.

- ✓ 1. Explain with a neat diagram the neural network architecture of multilayer feed forward network.
2. Find the algebraic sum of two fuzzy sets  $A = \{(3, 0.5), (5, 1), (7, 0.6)\}$  and  $B = \{(3, 1), (5, 0.6)\}$
- ✓ 3. Explain Genetic Algorithm with suitable diagram. Also discuss mutation operator.

**P.T.O.**

- (2)
- x4. Implement logical or gate with help of neural network.
  - x5. What is Multilayer perception?
  - ~~u~~x6. What do you mean by membership function. Make diagram for Triangular membership function.
  - 7. Define learning. Explain different types learning techniques in Artificial neural network.
  - x8. Find the weights required to perform the following classification using perception network.

The vector  $(1,1,1,1)$  and  $(-1,1,-1,-1)$  are belonging to the class (So have target 1), vector  $(1,1,1,-1)$  and vector  $(1,-1,-1,1)$  are belonging to the class (so have target value -1). Assume learning rate is 1 and weight is 0.

(3)

- x 9. What is two Point crossover and crossover in Genetic Algorithm?
- ✓ 10. What are the basic components of a fuzzy logic system? Explain in detail.