Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (CSE/EE/ECE/EEE/IT/ME) (Sem.–7) ARTIFICIAL INTELLIGENCE Subject Code : BTEC-908A-18 M.Code : 90678 Date of Examination : 22-01-2023

Time: 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

- 1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- 3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

- 1. Write briefly :
 - (a) Draw basic flow chart of Genetic Algorithm.
 - (b) Draw a basic model of artificial neural network.
 - (c) Compare biological neural network and artificial neural networks.
 - (d) Define fuzzy logic and crisp logic.
 - (e) Illustrate with examples fuzzy union and fuzzy compliment.
 - (f) What is the role of different layers present in an ART network?
 - (g) What is the importance of learning and testing algorithm in ANN?
 - (h) Discuss Biasing in ANN.
 - (i) Briefly explain Hebb's Rule.
 - (j) Differentiate between supervised and unsupervised learning.

SECTION-B

- 2. With a neat architecture, write the training algorithm of a MADALINE network.
- 3. With suitable examples, explain the various types of crossover and mutation techniques used in the genetic algorithm process.
- 4. What is an activation function? Mention various activation functions used in neural network.
- 5. Draw and explain the architecture of Neuro-Fuzzy Logic.
- 6. Discuss various applications of Neural networks and Fuzzy Logic.

SECTION-C

- 7. Implement a perceptron network for NAND function with bipolar inputs and targets.
- 8. With suitable examples, explain the operations and properties of fuzzy sets, crisp sets, fuzzy relations and crisp relations.

9. **Explain the following:**

- (a) FLS for Antilock Braking System
- (b) Back Propagation Neural Network.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.