



K22P 0304

Reg. No. : .....

Name : .....

**III Semester M.C.A. Degree (C.B.S.S. – Regular)**

**Examination, November 2021**

**(2020 Admission)**

**MCA3C04 : PRINCIPLES OF INTELLIGENT SYSTEMS**

Time : 3 Hours

Max. Marks : 60

**SECTION – A**

Answer **all** questions. **Each** question carries **two** marks.

1. Explain in brief about cost functions.
2. Discuss the Hebb network briefly.
3. What do you mean by the outer products rule ?
4. Give a brief description of auto-associative memory networks.
5. Give a note on the utilities of Fuzzy systems.
6. Give a note on crisp equivalence in the Fuzzy systems.
7. Discuss DeFuzzification in brief.
8. What do you mean by rank ordering in Fuzzy systems ?
9. Explain in brief the working principle of Genetic Algorithms.
10. Give a note on inheritance operators in Genetic modeling.

**SECTION – B**

Answer **all** questions. **Each** question carries **eight** marks.

11. A) Give a note on the following :
- a) Backpropagation network
  - b) Perceptron Network.

OR

- B) Explain the procedure in general to build a machine learning model.

P.T.O.



12. A) Explain the following with architecture and training process :

- a) ART-1 algorithm
- b) Associative memory networks.

OR

B) Give a note on the architecture of Kohonen self-organizing feature maps.

13. A) Give a comparative analysis of classical set vs Fuzzy sets.

OR

B) Explain the operations and properties of Fuzzy relations.

14. A) Give a note on the following with suitable examples.

- a) Fuzzy rule-based systems.
- b) Properties of Fuzzy-logic membership functions.

OR

B) Explain the following :

- a) Defuzzification for Fuzzy relations.
- b) Equivalence relations in Fuzzy systems.

15. A) Answer the following briefly :

- a) Name and describe the main features of the Genetic Algorithm (GA).
- b) Explain any one application of GA.

OR

B) Explain in a brief note on Genetic Modeling.

SECTION - B

Answer all questions. Each question carries eight marks.

11. A) Give a note on the following :

- i) Backpropagation network
- ii) Perceptron Network.

OR

B) Explain the procedure in general to build a machine learning model.