



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – COMPUTER SCIENCE

SECOND SEMESTER – APRIL 2023

PCS 2601 – SOFT COMPUTING

Date: 06-05-2023

Dept. No.

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

PART – A

(10 x 2 = 20 Marks)

Q. No

Answer ALL the Questions

- 1 What is Fuzzy Logic?
- 2 Write the search procedures for the Genetic Algorithm.
- 3 Define Membership Functions.
- 4 List the features of Membership Functions?
- 5 How does crossover affect the schema theorem?
- 6 What is genotype?
- 7 Why are genetic algorithms preferred for internet search?
- 8 Draw taxonomy of mutation operator.
- 9 Give the equation to maximize and minimize genetic algorithm implementation.
- 10 List the soft computing techniques.

PART – B

(5 x 8 = 40 Marks)

Answer ALL the Questions

- 11 (a) Briefly describe neural networks and their benefits.
(Or)
(b) Illustrate hybrid systems with an example.
- 12 (a) List the methods of membership value assignments.
(Or)
(b) Determine the fuzzy membership function of genetic algorithm.
- 13 (a) Compare and contrast traditional and genetic algorithms.
(Or)
(b) Write down the application of genetic algorithms.
- 14 (a) How genetic algorithms give optimized solution in Travelling Salesman Problem?
(Or)
(b) Why are Soft Computing Based Hybrid Fuzzy Controllers preferred over traditional methods for robotics control issues?
- 15 (a) Write the steps for solving quadratic equations with genetic algorithm approach?
(Or)
(b) Explain the implementation of genetic algorithm using c++ program.

Answer any TWO Questions

- 16 (a) Write in detail about the application scope of neural network. (10)
(b) Determine the methods of defuzzification. (10)
- 17 (a) Discuss with an example the holland classifier system. (10)
(b) Explain in detail about soft computing based rocket engine control. (10)
- 18 Write a C++ program to implement Madeline network. (20)

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