

Code No: 157DW

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech IV Year I Semester Examinations, January/February - 2023****SOFT COMPUTING****(Common to CSE, IT)****Time: 3 Hours****Max.Marks:75****Note:** i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

**PART – A****(25 Marks)**

- 1.a) List the differences between soft computing and hard computing. [2]
- b) What is a neural network? [3]
- c) What is relational join? [2]
- d) State extension principle for fuzzy sets. [3]
- e) Quote an example for multi criteria decision making. [2]
- f) List the variants of particle swarm optimization. [3]
- g) What is evolutionary computing? [2]
- h) Illustrate multipoint crossover. [3]
- i) How to reduce attributes in rough sets? [2]
- j) List neuro fuzzy systems. [3]

**PART – B****(50 Marks)**

2. Outline the recent trends and advancements in soft computing. [10]
- OR**
3. Explain in detail about various soft computing methods. [10]
  4. Explain the properties of intuitionistic fuzzy relations and composition of two IFRs with examples. [10]
- OR**
5. With suitable examples, discuss fuzzy propositions used in fuzzy rule based systems. [10]
  6. Compare and contrast problem solving with decision making. [10]
- OR**
7. Describe the clustering model of particle swarm optimization. [10]
  8. Explain the basic concepts and operators of genetic algorithms. [10]
- OR**
- 9.a) Discuss the importance of fitness function in genetic algorithm. [5+5]
  - b) Differentiate between mutation and crossover operations. [5+5]
  10. Demonstrate fuzzy C-Means clustering algorithm. [10]
- OR**
11. Elaborate integration of soft computing techniques in information retrieval and semantic web. [10]

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