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B.Sc / BCA DEGREE (CBCS) REGULAR / REAPPEARANCE / MERCY CHANCE EXAMINATIONS, FEBRUARY 2025

Sixth Semester

CHOICE BASED CORE COURSE - CS6CBT03 - SOFT COMPUTING TECHNIQUES

Common for B.Sc Information Technology Model III, Bachelor of Computer Applications & B.Sc Computer Applications Model III Triple Main

2017 Admission Onwards

C7B30DFF

Time: 3 Hours

Max. Marks : 80

Part A

Answer any **ten** questions. Each question carries **2** marks.

- 1. Define artificial intelligence.
- 2. What is meant by reinforced learning?
- 3. Explain the model of multilayer perceptron.
- 4. Explain how error is calculated in backpropagation algorithms.
- 5. What is the use of back propagatoion algorithm?
- 6. Differentiate between fuzzy set and crisp set.
- 7. Define fuzzy relations.
- 8. Define fuzzy propositions.
- 9. Explain fuzzy quantifiers.
- 10. State the methods used for defuzzification.
- 11. Define Permutation encoding in genetic algorithms.
- 12. Define crossover.

(10×2=20)

Part B

Answer any **six** questions. Each question carries **5** marks.

- 13. Explain the physical structure of human brain with the helpmof a diagram.
- 14. Describe three fundamental classes of neural networks.
- 15. Explain the architecture of a backpropagation network.
- 16. Explain the computation performed on three layers of multilayer perceptron.
- 17. Explain the basic fuzzy set operations.
- 18. Explain operations on fuzzy relations.
- 19. Elaborate the basic concepts of propositional logic.
- 20. Explain mutation.
- 21. Explain the imprtant issues faced while applying genetic algorithms to practical problems.

(6×5=30)

Part C

Answer any **two** questions. Each question carries **15** marks.

- 22. Explain perceptron and write fixed increment learning algorithm for a classification problem.
- 23. Explain the meaning of the term fuzzy set. Give a suitable example to illustrate the concept. How does it differ from the classical set theory?
- 24. Given (i) Every soldier is strong willed. (ii)All who are strong willed and sincere will succeed in their career (iii)Indira is a soldier. (iv) Indira is a sincere Prove: Will Indira succeed in her career?
- 25. Elaborate the concept of genetic algorithm. Explain the traditional algorithms used and their problems which lead to the development of genetic algorithm.

(2×15=30)