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Roll No

CS-702(A)-CBGS

B.Tech., VII Semester

Examination, December 2020

Choice Based Grading System (CBGS)

Computational Intelligence

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) What is meant by Feed forward or Feedback Networks?
b) Discuss the various component of computational intelligence.
2. Consider two Fuzzy sets X and Y with the following membership function.
 $X = \{ x_1/0.4, (x_2/0.7), (x_3/0.8), (x_4/1) \}$
 $Y = \{ x_1/0.3, (x_2/0.6), (x_3/0.5), (x_4/0.9) \}$
Calculate $x \cup y, x \cap y, x - y, x + y$
3. a) Define defuzzification and explain the different defuzzification methods.
b) Explain in detail how fuzzy logic can be used in Automobile Industry.
4. a) Define the term mutation and crossover used in Genetic Algorithm.
b) Write various advantages and disadvantages of Genetic Algorithm.

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5. Explain following term:
 - i) Rough Membership
 - ii) Decision tree model
6. Explain Ant colony optimization techniques and discuss why Ant colony techniques used for optimization.
7.
 - a) Describe Hidden Markov Model and its application.
 - b) Explain Bee colony optimization techniques.
8. Write short notes on (any three):
 - i) Learning Model
 - ii) Fitness Function
 - iii) Set approximation
 - iv) Types of Computational Intelligence
