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**B.C.A. Examination, 2023****(II Semester)****Paper : IV****Introduction to Soft Computing***Time : Three Hours ]**[Maximum Marks : 75*

**Note :** Attempt any **five** questions. **All** question carry equal marks.

1. What is Soft Computing? Distinguish between Soft computing and Hard Computing? Describe any one application of Fuzzy Logic.
2. What is Fuzzy Logic? State and explain different properties of a Fuzzy sets and Crisp sets.

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3. Explain fuzzy inference? Describe the types of procedures used in fuzzy inference.
4. Explain Defuzzification. Classify the different methods of defuzzification process.
5. What is Genetic Algorithm? Describe the working principle and procedure of Genetic Algorithm.
6. Define Encoding in Genetic algorithm. Describe the different encoding methods. Discuss the applications of Genetic Algorithm.
7. What is Artificial Neural Network? Compare Biological Neural Network with Artificial Neural Network. Discuss the application of Artificial Neural Network.

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8. Define learning. Explain different types of learning techniques in Artificial Neural Network.
9. Explain the architecture and working of a Back propagation neural network.
10. Describe the short notes on any of **two** following:
  1. Fuzzification
  2. Genetic Operators
  3. Fuzzy to Crisp conversion