

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**M.Tech. Summer 2018 - 19 Examination**

**Semester: 2**  
**Subject Code: 203202153**  
**Subject Name: Soft Computing**

**Date: 08/05/2019**  
**Time: 10:30am to 1:00pm**  
**Total Marks: 60**

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**Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1** A) What is supervised and unsupervised learning? Explain with the examples (05)  
B) Explain various types of soft computing techniques and give its applications. (05)  
C) Differentiate Soft Computing and Hard computing. (05)
- Q.2 Answer the following questions.** (Attempt any three) (Each five mark) (15)  
A) What are linearly inseparable problems? How to solve X-OR problem.  
B) Explain the Taxonomy of Neural Network Architecture  
C) Give the Properties of Fuzzy set  
D) Explain competitive learning
- Q.3** A) Describe the Genetic Algorithm (GA) steps using the Population, Fitness function, other necessary data and hypothesis it returns. (07)  
B) Explain the perceptron learning algorithm. (08)
- OR**
- B) Explain basic Fuzzy Set Operations (08)
- Q.4** A) Explain the working of back propagation neural network with neat architecture and flowchart. (07)
- OR**
- A) What are the limitations of single layer perceptron? (07)
- B) Explain pattern classification with example. (08)