

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (OLD) EXAMINATION – WINTER 2018****Subject Code: 173101****Date: 29/11/2018****Subject Name: Soft Computing****Time: 10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is unsupervised learning? Discuss Kohonen's self organizing networks in detail **07**
 (b) Explain the Hebbian Learning Rule **07**
- Q.2** (a) Enlist and discuss different fuzzy set theoretic operations with example(s). **07**
 (b) What is meant by hybrid system and discuss its various types. **07**
- OR**
- (b) Explain Roulette-wheel Selection and Rank Selection with example. **07**
- Q.3** (a) How TSP can be solved using GA. Describe operation performed in different phases using suitable examples. **07**
 (b) Compare genetic neural network with ANN **07**
- OR**
- Q.3** (a) Explain different selection methods for GA **07**
 (b) Discuss Adaptive Neuro-Fuzzy Inference Systems **07**
- Q.4** (a) Describe Inductive Concept Learning **07**
 (b) What do you mean by hybrid system? What is the need of such system(s), explain in brief. Also enlist and explain types of hybrid system. **07**
- OR**
- Q.4** (a) Explain Neuro-Fuzzy Systems for Pattern Recognition **07**
 (b) Describe Rough Approximation **07**
- Q.5** (a) Discuss Color recipe prediction as an application of computational intelligence in soft computing. **07**
 (b) Write detailed note on 'GA based weight optimization' **07**
- OR**
- Q.5** (a) Explain Mamdani Fuzzy Models with suitable example **07**
 (b) Explain architecture of Adaptive Neuro-Fuzzy Inference Systems **07**
