

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
ME – SEMESTER-II(NEW) EXAMINATION – WINTER-2020

Subject Code:3720217

Date: 29/Jan/2021

Subject Name: Soft Computing

Time: 02:00 PM To 04:00 PM

Total Marks: 56

Instructions:

- 1. Attempt any FOUR questions out of EIGHT questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**

- Q.1** (a) Define Soft Computing. Explain its importance. Compare Soft Computing with Hard Computing. **07**
(b) Draw a flowchart and explain an Evolutionary Algorithm. **07**
- Q.2** (a) What is Unsupervised Learning? Discuss Kohonen's self organizing networks in detail. **07**
(b) Give problem statement of Travelling Salesman Problem (TSP). Explain Crossover operation for the solution of the same problem using Genetic Algorithm. **07**
- Q.3** (a) Discuss various operations of fuzzy sets with example. **07**
(b) Discuss Roulette-wheel selection and Tournament selection methods in detail with example(s). **07**
- Q.4** (a) Write the differences between Classical Algorithm and Genetic Algorithm. Explain different types of crossover methods in Genetic Algorithm with example(s). **07**
(b) Enlist and explain various Artificial Neural Network architectures. **07**
- Q.5** (a) Describe various encoding methods in Genetic Algorithm. **07**
(b) Explain Fuzzy if-then rules using example. **07**
- Q.6** (a) Explain Rank selection method with suitable example. **07**
(b) Write short note on 'Adaptive Neuro-Fuzzy Inference System'. **07**
- Q.7** (a) What is defuzzification? Describe any two methods of defuzzification. **07**
(b) Enlist and explain various Hybrid Systems. **07**
- Q.8** (a) Define Supervised and Unsupervised Learning. Differentiate between AI and ANN. **07**
(b) Explain Printed Character Recognition. **07**
