



- Notes :
1. Solve Question 1 OR Questions No. 2.
  2. Solve Question 3 OR Questions No. 4.
  3. Solve Question 5 OR Questions No. 6.
  4. Solve Question 7 OR Questions No. 8.
  5. Solve Question 9 OR Questions No. 10.
  6. Solve Question 11 OR Questions No. 12.

1. a) What is soft computing constituents? Explain in details. **6**
- b) Explain in detail the concept of intersection and complement. **7**

**OR**

2. a) Define Neuro-fuzzy and soft-computing characteristic. **6**
- b) Explain fuzzy if-then Rule in details. **7**
3. a) Explain mamdani fuzzy models. **6**
- b) Define the term "Genetic Algorithm" **7**

**OR**

4. a) Explain Sugeno fuzzy models. **6**
- b) Explain Downhill simplex search technique. **7**
5. a) Explain feed - forward Network. **6**
- b) What is Back - propagation multi-layer perceptron's? Explain. **7**

**OR**

6. a) Explain Hybrid learning rule. **6**
- b) Define Radial Basis function networks. **7**
7. a) Explain Kohonen self - organizing Networks. **7**
- b) What is Hebbian learning? Explain. **7**

**OR**

8. a) Explain Learning vector Quantization. **7**

- b) What is Hopfield networks? Explain. 7
9. a) Explain ANFIS Architecture in detail. 7
- b) Explain K-means clustering. 7
- OR**
10. a) Explain ANFIS as universal Approximates. 7
- b) Explain subtractive clustering. 7
11. a) Explain the term "Input selection". 6
- b) Define Rule bare organization. 7
- OR**
12. a) Explain the term "input space partitioning". 6
- b) Define focus set-based rule combination. 7

\*\*\*\*\*