

Total No. of Printed Pages:2

**SUBJECT CODE NO:- H-185**  
**FACULTY OF ENGINEERING AND TECHNOLOGY**  
**B.E. (CSE)**  
**Soft Computing**  
**(REVISED)**

[Time: Three Hours]

[Max.Marks: 80]

Please check whether you have got the right question paper.

N.B

- I) Q.No.1 from section A and Q.No.6 from section B are compulsory.  
 II) Attempt any two questions from remaining question of each section.  
 III) Assume suitable data if necessary and solve it clearly.

## Section A

- |     |   |    |
|-----|---|----|
| Q.1 | a) Explain the various types of soft computing techniques.  | 05 |
|     | b) Explain perception model.                                | 05 |
| Q.2 | a) Explain supervised learning and unsupervised learning.   | 07 |
|     | b) Explain functional units of ANN for pattern recognition. | 08 |
| Q.3 | a) Explain architecture of FFNN.                            | 07 |
|     | b) Explain pattern association by FFNN.                     | 08 |
| Q.4 | a) Explain Hopfield network.                                | 07 |
|     | b) Explain associative memory.                              | 08 |
| Q.5 | a) Explain auto association and hetero association          | 08 |
|     | b) Explain back propagation learning algorithm.             | 07 |

## Section B

- |     |   |    |
|-----|---|----|
| Q.6 | a) Explain self-organization map.                           | 05 |
|     | b) Explain learning vector quantization                     | 05 |
| Q.7 | a) Explain crisp relations                                  | 07 |
|     | b) Explain fuzzification and defuzzification to crisp sets. | 08 |
| Q.8 | a) Explain generalized learning laws.                       | 07 |
|     | b) Explain applications of fuzzy control.                   | 08 |

- Q.9 a) Explain operations in fuzzy relational data models 07
- b) Explain fuzzy relations 08
  
- Q.10 a) Explain working principle of genetic algorithm. 07
- b) Explain fuzzy linear programming with example. 08