

Roll No.

23070

**M. Tech 2nd Semester (IT)
Examination – May, 2018**

SOFT COMPUTING

Paper : MTCE-602-A

Time : Three Hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any *five* questions. All questions carry equal marks.

1. What is Perception ? Explain it in Detail. Also realize it for AND function for bipolar data.
2. What is Associative Memory ? Give its types.
3. Write different Reshaping Operations for the membership curve.
4. Explain Hebb Learning rule with its algorithm. Also realize AND function for bipolar data.

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5. (a) What is Linguistic Variable Explain in Detail.

(b) Compute $A(+)B$ and $(A-B)$ where :

$$\mu_A(x) = \begin{cases} 0 & x \leq -6 \\ (x+6)/4 & -6 < x \leq -2 \\ (-x+3)/5 & -2 < x \leq 3 \\ 0 & x > 3 \end{cases} \quad \mu_B(x) =$$

$$\begin{cases} 0 & x \leq -1 \\ (x+1)/5 & -1 < x \leq 4 \\ (-x+10)/6 & 4 < x \leq 10 \\ 0 & x > 10 \end{cases}$$

6. Explain the following Operation of Fuzzy Set by taking a suitable example :

- (i) Union
- (ii) Intersection
- (iii) Complement
- (iv) Aggregation

7. What is Multi-Valued logic ? Give in detail.

8. Explain the following :

- (i) Linguistic Hedges
- (ii) Fuzzy Quantities
- (iii) Fuzzy Propositions