

Total No. of Questions : 8]

[Total No. of Printed Pages : 2

Roll No .....

## **IT-701-CBGS**

**B.Tech., VII Semester**

Examination, December 2020

### **Choice Based Grading System (CBGS)**

#### **Soft Computing**

*Time : Three Hours*

*Maximum Marks : 70*

**Note:** i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) State the difference between supervised learning and unsupervised learning.  
b) Use Mc Cullon Pitts neuron to design logic Networks of AND and OR logic function.
2. Write down atleast one unique application area for each of the following learning process.
  - i) Fuzzy logic
  - ii) Neural Network
  - iii) Genetic algorithm
  - iv) PSO
3. a) Explain the architecture and algorithm of Counter Propagation Network with diagram.  
b) Explain Kohonen SoM Network.
4. a) Define Population, Chromosome, Gene, Allele, Genotype and Phenotype.  
b) Discuss Ant colony optimization methods.

IT-701-CBGS

PTO

[2]

5. Explain the following term:
  - i) Convolutional Neural Network
  - ii) Fuzzy Inference System
  - iii) Adaline / Madaline
  
6. a) Consider Two Fuzzy sets  
 $A_1 = 0.2/x_1 + 0.9/x_2$  and  
 $A_2 = 0.3/y_1 + 0.5y_2 + 1/y_3$   
Determine  $A_1 - A_2$  or  $A_1 + A_2$ 
  - b) Name and explain different Fuzzy Membership Functions with a diagram.
  
7. A two layer Network has two neurons in each layer, three inputs, including on augmentation input and two outputs with back propagation algorithm. How will you find weights, slopes, error signals, output and the updated weights.
  
8. Write short notes (any three):
  - i) Schema theorem
  - ii) Fuzzy if then Rules
  - iii) RBFN
  - iv) Hebb Rule

\*\*\*\*\*

IT-701-CBGS