B.Tech. (CSE) 7th Semester (G-Scheme)

Examination, December-2022

NEURAL NETWORKS

Paper - PCC-CSE-401-G

Time allowed : 3 hours] *[Maximum marks : 75*

Note: *All questions carry equal marks.* ***Question no. 1 is compulsory.*** *In addition to the compulsory question, student will have to attempt* ***four more*** *questions selecting* ***one*** *question from each unit.*

1. Compulsory Question :

(a) Discuss evolution of neural network.

(b) Explain the Competitive Learning.

(c) Obtain the output of neuron Y neuron having three input $x_1 = 1$, $x_2 = 2$, and $x_3 = 3$ and weight are $w_1 = 1$, $w_2 = 1$, $w_3 = 2$ by using Threshold and Sigmodial activation functions.

(d) Discuss the concept of Storage capacity in Associative Memory.

Unit - I

2. Explain the component of a Biological Neuron. Also focus on Biological neuron equivalencies to artificial neuron model.

3. What is Activation Function? Why it is used? Give different types of activation function in detail.

Unit - II

4. What is perceptron? Also realize if for OR function for bipolar data.

5. Explain Linear Separability Concept by taking a suitable example, also classify the output of OR function using it.

Unit - III

6. Derive Gradient Decent algorithm and compare it with generalized delta learning rule.

7. What is Learning? Explain its different types.

Unit - IV

8. Store the vector (1 1 – 1 –1) in Auto Associative Network, And

   (a) Find the Weight Matrix

   (b) Test the net with input vector

   (c) Test with one mistake in input

   (d) Test with one missing in input

   (e) Test with two missing in input

   (f) Test with two mistake in input

9. What is Associative Memory? Explain Auto Associative Memory with its architecture, training (insertion) and testing (Retreival) Algorithm.