

Roll No.

OLE-24489
B. Tech. 7th Sem. (CSE)
Examination – April, 2021

NEURAL NETWORKS

Paper : CSE-407-F

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 by selecting *one* question from each Section. Question No. 1 is *compulsory*. All questions carry equal marks.

1. Write short note on the following :

- (a) Derive Delta Learning.
- (b) Write about Error back-propagation training.
- (c) Explain Hopfield networks.
- (d) Explain unsupervised learning.

SECTION – A

2. Explain Hebb Learning rule with its algorithm. Also realize AND function for bipolar data.
3. What is Perceptron ? Explain it in Detail. Also realize it for AND function for bipolar data.

SECTION – B

4. Explain Error Back-Propagation training algorithm by taking a suitable example.
5. Explain Single Layer Continuous Perceptron Networks for linearly separable classifications.

SECTION – C

6. What is Associative Memory ? Give its types.
7. Use the Hebb Rule to store the vector $(1 \ 1 \ -1 \ -1)$ in an 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

SECTION – D

8. Explain unsupervised learning of clusters with suitable example.
 9. Explain Winner-take-all learning rule with a suitable example.
-