Roll No. _____

3533

B. Tech. 7th Semester (CSE) Examination – February, 2022

NEURAL NETWORKS

Paper : PCC-CSE-401-G

Time : Three Hours] *[Maximum Marks : 75*

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 *five* questions in all, selecting *one* question from each Section. Question No. 1 is *compulsory*. All questions carry equal marks.

1. Explain the following : 5 × 3 = 15

   (a) Hebbian learning.

   (b) Reinforcement learning.

   (c) Feedforward vs feedback Networks.

   (d) What is the need of Activation Functions in ANN ?

   (e) Explain term Linear Separability classification.

SECTION – A

2. What are biological neurons ? How they resemble artificial neuron models. Compare and contrast biological neurons with Artificial Neural Networks. 15

3. (a) Explain various architecture models of ANN with their corresponding advantages and disadvantages. 8

   (b) What are Activation functions and why we need these functions in ANN ? Also write significance of any three non-linear functions used in ANN. 7

SECTION – B

4. Discuss architecture of McCulloch Pitts Neural Network model in detail. Also explain McCulloch Pitts model to design logic networks of AND and OR logic function. 15

5. Explain perceptron network training architecture in detail. Also, write implementation of AND function using perceptron learning. 15

SECTION – C

6. (a) Differentiate between supervised and unsupervised learning. 8

   (b) Explain Gradient Descent Algorithm in detail. 7

7. (a) Explain Error Back propagation algorithm in detail. 9

(b) Write short note on Delta Learning rule. 6

SECTION – D

8. (a) Explain different type of Associative memories in detail with example. 7

(b) Write storage and Retrieval algorithm for associative memory. 8

9. Explain bidirectional associative memory architecture, its association encoding and decoding in detail. 15
