Roll No. _____

22675

M. Tech. 3rd Semester (ECE) CBCS Scheme

Examination – February, 2022

NEURAL NETWORKS & FUZZY LOGICS

Paper : 16ECE23C1

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

1. (a) List out salient features of ADALINE model.

   (b) Enumerate difference between Models of neural networks and neural network models.

   (c) Explain partially recurrent neural networks.

   (d) Enumerate difference between supervised and unsupervised learning.

   (e) Discuss Fuzzy Linguistic variables. $4 \times 5 = 20$

UNIT – I

2. (a) Discuss the developments in artificial intelligence that led to the interest in exploring new models for computing. 10

   (b) What is the difficulty with the existing methods for solving natural pattern recognition problems ? 10

3. Write briefly about the following : 10 × 2 = 20

   (a) McCulloch-Pitts Model

   (b) Rosenblatt's perception model

UNIT – II

4. (a) Discuss in details the requirements of learning laws for effective implementation. 10

   (b) Discuss in details various categories of learning. 10

5. (a) Explain both the variants of Stochastic learning. Also give suitable example. 10

   (b) Discuss the procedure for a competitive learning network with linear units performs a short-term memory task. 10

UNIT – III

6. Explain the behavior of a radial basis function method for function approximation for different values of the regularization parameter. 20

7. (a) Explain briefly the operation of an ART for binary patterns. 10

   (b) Explain briefly about CMAC networks. 10

UNIT – IV

8. (a) Write briefly about Fuzzy Vs Crisp set. Give suitable example of each. 10

   (b) Explain in details industrial applications of fuzzy logic 10

9. Write Short notes on the following : 10 × 2 = 20

   (a) Fuzzy system design.

   (b) De fuzzification.