

Roll No.

22157

**M. E. 3rd Semester (ECE)
Examination – December, 2014**

NEURAL NETWORKS & FUZZY LOGIC

Paper : MEEC-601

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. All questions carry equal marks.

1. (a) Draw the diagram and explain the structure of biological neurons. 10
- (b) Discuss the characteristics of artificial neural networks. 10
2. Explain various learning schemes in artificial neural networks such as supervised, unsupervised and reinforcement learning. What are the different applications of neural networks? 20

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3. Show that how the Hopfield net may be used to maximize an objective function by recasting the objective as one to be minimized. 20
4. Explain the Error Back Propagation training algorithm and elaborate its area of applications. 20
5. (a) Explain CMAC Network. 10
- (b) Explain radial basis function neural network with examples. 10
6. Enlist various applications of Artificial Neural Networks. Explain the implementation of pattern recognition with ANN, taking any suitable example. 20
7. What are different defuzzification methods ? Explain the most accurate method with the help of an example. 20

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8. Write short notes on :

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- (i) Fuzzy IF-THEN rule,
- (ii) Linguistic variables in fuzzy logic,
- (iii) Defuzzification.

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