**Reg. No. :** | | | | | | | | | | |

# Question Paper Code: 31382

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Elective

Electrical and Electronics Engineering

01UEE910 - FUZZY LOGIC AND NEURAL NETWORKS

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. List the operations on classical sets.
2. What you mean by universal set?
3. Differentiate fuzzification and defuzzification.
4. What is the purpose of knowledge base module?
5. Define Artificial Neural Network (ANN).
6. What are the four main steps in back propagation algorithm?
7. Define threshold.
8. What is Recurrent Network?
9. List some of the applications of Neural Networks.
10. What are fuzzy relations?

PART - B (5 x 16 = 80 Marks)

11. (a) A = {(1/2) + (0.5/3) + (0.3/4) + (0.2/5)}, B = {(0.5/2) + (0.7/3) + (0.2/4) + (0.4/5)}. Calculate the several operation of the fuzzy set. (16)

Or

(b) Describe the properties of crisp sets in fuzzy logic. (16)

12. (a) Explain different methods of fuzzification and defuzzification with example. (16)

Or

(b) With a neat sketch discuss the major components of fuzzy controller. (16)

13. (a) Explain single and multilayer feed forward network with example. (16)

Or

(b) Explain the back propagation algorithm training with any one example. (16)

14. (a) Explain the algorithm of discrete time and continuous time Hopfield network with its architecture. (16)

Or

(b) Explain the recurrent networks in ANN. (16)

15. (a) State the inverted pendulum problem. Discuss the design of a neuro controller for the inverted pendulum. (16)

Or

(b) Explain how to implement the fuzzy controller in washing machine. And also write the algorithm. (16)