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Question Paper Code: 39310

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

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. Explain the defuzzification method of center of sums.
4. What is the purpose of knowledge base module?
5. Define Artificial Neural Network (ANN).
6. Define threshold.
7. What is the main purpose of Hop field network?
8. What is Recurrent Network?
9. What are the basic elements of a fuzzy logic control system?
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) Illustrate the fuzzy rule based system with suitable example. (16)

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

Or

- (b) Explain the Back propagation learning with its computations. (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) Illustrate the automatic generation control using fuzzy logic controllers. (16)

Or

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