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**Question Paper Code: 39310**

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

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 any two operations on classical sets.
2. What you mean by universal set?
3. List the defuzzification methods.
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. Write the applications of associative memory.
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) Explain the process of defuzzification. (16)

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

Or

- (b) (i) Explain single and Multilayer feed forward network with example. (12)

- (ii) What is activation function? Give its types. (4)

14. (a) Sketch and explain the architecture of Bi-directional associative memories. (16)

Or

- (b) Explain the Hopfield network and draw its architectures. (16)

15. (a) Describe the fuzzy logic application in power systems automatic generation control. (16)

Or

- (b) Explain the fuzzy set descriptions for the inverted pendulum problem. (16)