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**Question Paper Code: 39310**

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Elective

Electrical and Electronics Engineering

01UEE910 - FUZZY LOGIC AND NEURAL NETWORKS

(Regulation 2013)

Duration: 1.15 hrs

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

**(Answer any six of the following questions)**

- Fuzzy logic is usually represented as
  - IF-THEN-ELSE rules
  - IF-THEN rules
  - OR
  - AND
- The values of the set membership is represented by
  - Discrete Set
  - Degree of truth
  - Probabilities
  - Both (b) & (c)
- Fuzzy logic is a form of
  - Two-valued logic
  - Crisp set logic
  - Many-valued logic
  - Binary set logic
- Fuzzy logic is usually represented as
  - IF-THEN-ELSE rules
  - IF-THEN rules
  - Both (a) & (b)
  - None of these
- A four input neuron has weights 1,2,3 and 4. The transfer function is linear with the constant of proportionality being equal to 2. The inputs are 4,10,5 and 20 respectively. The output will be
  - 238
  - 76
  - 119
  - 100

6. A perceptron is a
- (a) Feed-forward neural network                      (b) Back-propagation algorithm  
(c) Back-tracking algorithm                              (d) Feed Forward-backward algorithm
7. An associative network is
- (a) A neural network that contains no loop  
(b) A neural network that contains feedback  
(c) A neural network that has only one loop  
(d) None of these
8. In artificial Neural Network interconnected processing elements are called
- (a) nodes or neurons      (b) weights              (c) axons              (d) Soma
9. \_\_\_\_\_ is/are the way/s to represent uncertainty.
- (a) Fuzzy Logic    (b) Probability  
(c) Entropy    (d) All the above
10. Neural Networks are used for application of complex \_\_\_\_\_ with many parameters.
- (a) Linear Functions                                      (b) Nonlinear Functions  
(c) Discrete Functions                                      (d) Exponential Functions

PART – B (3 x 8= 24 Marks)

**(Answer any three of the following questions)**

11. Explain different types membership functions used in fuzzification process. (8)
12. Illustrate the fuzzy rule based system with suitable example. (8)
13. Explain Rosenblatts perceptron model single layer and multi-layer perceptrons? (8)
14. Sketch and explain the architecture of Bi-directional associative memories. (8)
15. Illustrate the automatic generation control using fuzzy logic controllers. (8)