

III B. TECH I SEMESTER REGULAR EXAMINATIONS, FEB - 2022
NEURAL NETWORKS AND FUZZY LOGIC
(Electrical and Electronics Engineering)

Time: 3 Hours**Max. Marks: 60**

Note: Answer ONE question from each unit (5 × 12 = 60 Marks)

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UNIT-I

1. a) Explain the biological neuron with a neat sketch? [6M]
- b) Compare the different parts of ANN and Biological Neural network (BNN) with their functions? [6M]

(OR)

2. a) List out the characteristics of Mc-Culloch pitt's artificial neural network (ANN)? [6M]
- b) Describe the activation functions? Explain the different activation functions with applications? [6M]

UNIT-II

3. a) Summarize the learning rules of ANN? Explain the any three learning rules? [6M]
- b) Outline the differences between supervised and unsupervised learning methods? [6M]

(OR)

4. a) With an illustrative example explain the perceptron training algorithm? [6M]
- b) With a neat sketch explain the architectures of Artificial Neural networks? [6M]

UNIT-III

5. a) Explain the input, hidden and output layer learning in a backpropagation neural network? [6M]
- b) Summarize the algorithm of radial basis function neural network? [6M]

(OR)

6. a) Explain the radial basis function neural network with a neat sketch? [6M]
- b) Outline the applications of backpropagation neural network? [6M]

UNIT-IV

7. a) What are the operations of classical sets? [6M]
- b) With an illustration explain the concept of cardinalities of classical and fuzzy sets? [6M]

(OR)

8. a) What are the properties of fuzzy sets? [6M]  
b) Summarize the different membership functions in fuzzy sets? [6M]

UNIT-V

9. a) Explain various defuzzification methods with suitable examples. [6M]  
b) Outline the application of Fuzzy set with respective AC Motor. [6M]

(OR)

10. a) What is fuzzification? Explain about the defuzzification to crisp sets. [6M]  
b) What are the basic components of a fuzzy logic system? Explain each of them in detail. [6M]

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