53 (IT 819) FLNN

2019

FUZZY LOGIC AND NEURAL NETWORK

Paper : IT 819

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

1. What is Artificial neuron ? What is its similarity and dissimilarity with biological neuron ? What are its advantages ? How the artificial neural networks differ from normal computer ? 20

2. Describe the McCulloch-Pitts Model. Describe the different learning strategies. 20

3. What is Backpropagation ? Explain the training method along with its limitations. 20

Contd.

4. Describe about Bidirectional Associative Memory (BAM). 20

5. How the fuzzy set differs from classical set? What is the difference between probability and fuzzy set? Define union, intersection and α-cut of fuzzy set. If A, B are fuzzy sets with given membership functions —

$$\mu A(x) = \{0.2, 0.4, 0.8, 0.5, 0.1\}$$

$$\mu B(x) = \{0.1, 0.3, 0.6, 0.3, 0.2\},$$

then find $A \cap B$, $A \cup B$. 20

6. Describe Fuzzy Logic system with various modules. 20

7. Write short notes on : 4×5=20

   (a) Training

   (b) XOR problem

   (c) Fuzzy complement

   (d) Sigmoid function.