

322840(22)

**B. E. (Eighth Semester) Examination,
Nov.-Dec. 2017**

(New Scheme)

(CSE, IT Egg. Branch)

NEURAL NETWORK and FUZZY LOGIC

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Part (a) of each question is compulsory. Attempt any two parts from (b), (c) and (d) of each question except question no. 4.

Unit-I

- 1. (a) What is Neuron? 2

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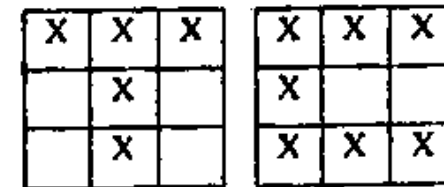
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- (b) Draw Mc-Cullouch and Pitts (MCP) network for AND and OR with defining MCP model. 7
- (c) Draw mathematical model of neuron and explain its biological analogy. 7
- (d) Discuss different neural network topologies in detail. 7

Unit-II

- 2. (a) What is convergence? 2
- (b) Classify the 2-D input pattern representing letters using Hebbian rule (The T-C problem). 7



- (c) Differentiate the supervised and unsupervised learning. 7
- (d) Write short notes on credit assignment problem. 7

Unit-III

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- 3. (a) What is Perceptron? 2
- (b) Derive Least Means Square algorithm. 7
- (c) Explain perceptron for AND and OR gate using perceptron learning algorithm. 7
- (d) Discuss ADALINE algorithm with neat diagram. 7

Unit-IV

- 4. (a) What is speech generation? 2
- (b) Describe the use of neural networks in digit recognition. 14

Or

- (c) Describe the application of neural networks in pattern recognition. 14

Unit-V

- 5. (a) Explain fuzzy logic. 2
- (b) Write notes on fuzzy associative memories. 7
- (c) Let us consider two fuzzy sets : 7

$$A = \{(1, 0.6), (2, 1.0), (3, 0.5), (4, 0.3), (5, 0.8)\}$$

$$B = \{(2, 0.5), (3, 0.7)\}$$

- Find out the Algebraic product, Cartesian product, Algebraic sum, Bounded Sum, Bounded difference.
- (d) Write short notes on fuzziness in neural networks.