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Total No. of Pages : 02

Total No. of Questions : 8

M.Tech. (ECE) (2018 Batch) (Sem.-2)

**NEURAL NETWORKS**

Subject Code : MTEC-PE3C-18

M.Code : 76263

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. Attempt any FIVE questions out of EIGHT questions.

2. Each question carries TWELVE marks.

- Q1 a) Write the types of various activation functions used in neural network. Explain two of them in detail. [06]
- b) What is learning? Explain the reinforcement learning with an example. [06]
- Q2 a) Discuss the importance of back propagation algorithm. Explain one of the applications in detail. [06]
- b) Draw and explain the working of McCulloch-Pitts model of neural network. [06]
- Q3 a) What is content addressable memory? Discuss the difference between instar and outstar learning rule. [06]
- b) Why are symmetrical weights and weights with no self connection important in discrete Hopfield network? [06]
- Q4 a) What is perceptron? Explain perceptron learning rule algorithm in detail. [06]
- b) Define Hamming distance. Explain the usefulness of Hamming distance in any artificial neural network based application with an example [06]
- Q5 a) Differentiate a fuzzy set and crisp set based on their properties with an example. [06]
- b) Define Fuzzification. Explain any one of the fuzzification scheme with an example. [06]

- Q6 a) State the basic principle of Sugeno inference technique with an example. [06]  
b) Explain the significance of fuzzy t-norm and t-conorm operators with an example. [06]
- Q7 a) Explain the concept of fuzzy uncertainty and fuzzy logic with suitable example. [06]  
b) Draw and explain fuzzy-neuro system with neat block diagram and suitable example. [06]
- Q8 Draw and explain the various steps required to implement genetic algorithm with the help of block diagram. Discuss each of them in detail. [12]

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**NOTE : Disclosure of Identity by writing Mobile No. or making of passing request on any page of Answer sheet will lead to UMC against the Student.**