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Exam.Code:1018
Sub. Code: 7786

1059

M.E. Electronics Engineering (Power System)
Second Semester
EE-8203: Advanced Neural Networks and Fuzzy Logic

Time allowed: 3 Hours Max. Marks: 50

NOTE: *Attempt any five questions.*

x-x-x

I. a) How does problem solving using an artificial neural network differ from that using a digital computer? What types of problems are not considered suitable for neural nets?

b) What is neural network? Explain the different classes of network architecture? With the help of suitable diagrams? (5,5)

II. a) Derive the formula used for adjusting weights during the training of a multilayer perceptron?

b) Discuss back propagation algorithm for a multi layer network? (5,5)

III. a) Discuss the characteristics of the Hopfield model followed by an account of its training and recognition stages.

b) Explain how bidirectional associative memory (BAM) can be used as hetro-associative memory? (5,5)

IV. a) Explain how an unsupervised learning mechanism can be adopted to solve supervised learning tasks with the help of learning vector quantization (LVQ) algorithm?

b) Discuss any two applications of SOFM algorithm? (5,5)

V. a) What are the main stages in the pattern recognition process? Describe with examples, the concepts of feature vectors and discriminant functions in this context?

b) With neat architecture, explain the training algorithm of ART network? (5,5)

VI. a) Discuss various Neuro-fuzzy signal analyses for washing machines?

b) What is fuzzy expert system? Explain properties of fuzzy sets with example? (5,5)

P.T.O.

VII. a) Explain intelligent solution for "Pattern Recognition for finger prints" using Fuzzy logic?

b) Discuss the neural network model for speech recognition application? (5,5)

VIII. a) Discuss the role of similarity measures in the process of linguistic defuzzification? Give examples of two different similarity measures?

b) Discuss briefly about fuzzy rule base for Home Heating System with a fuzzy rule membership function condition? (5,5)

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