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Total Number of Pages : 1

M.TECH

M.TECH 2ND SEMESTER (AR 17) SUPPLEMENTARY EXAMINATIONS, APRIL/MAY 2019
SOFT COMPUTING TECHNIQUES

Branch: PE, Subject Code:MPEPE2043

Time: 3 Hours

Max Marks : 70

PART-A**(10 X 2=20 MARKS)****1. Answer the following questions.**

- What are the different activation functions used and different learning rules available?
- Write the expression for bipolar continuous and bipolar binary activation function
- Explain the working of a self organizing map
- What is alpha or lambda cut set and What is cardinality of a Fuzzy set
- Suggest a suitable evolutionary computing technique for finding optimized Economic load dispatch
- Justify why Artificial Neural Network is called adaptive system during training
- Write the expression for bipolar continuous and bipolar binary activation Function
- What is meant by winner take all?
- What is stability-plasticity dilemma?
- Define the term cross over rate in GA. and Define mutation rate in GA

PART-B**(5 X 10=50 MARKS)****Answer any five questions from the following.**

- Draw the architecture of Hopfield net. Design Hopfield net for 4 bit bipolar pattern The training pattern are
I sample S1[1,1,-1,-1]
II Sample S2[-1,1,-1,1]
III sample S3[-1,-1,-1,1]
Find the weight matrix and energy for three input samples. [5]
 - With a neat sketch explain the operation (Training and Testing) of a Recurrent Neural Network [5]
- Give the general scheme for a Fuzzy controller. How different modules are interconnected [5]
 - Explain different membership function with diagram
- Summarize the sequential p [procedures involved in the crossover and reproduction phase of GA with typical examples [5]
 - Explain the Kohonen self organizing network with an example [5]
- Write various steps of the back propagation algorithm [5]
 - What do you mean by neuro controller explain its application in inverted pendulum system [5]
- Explain different membership function with diagram [5]
 - Sketch the block diagram of fuzzy logic controller for a nonlinear process [5]
- Assume atypical control problem of yours and explain the various steps involved in finding a solution using GA [5]
 - Taking an example explain how stability of FLC can be analyzed? [5]
- Write short notes on
 - Using Matlab Neural Network tool box discuss how will you identify and control the linear and nonlinear dynamic system [5]
 - How Fuzzy logic controller is implemented using Fuzzy logic Matlab Tool Box [5]