

Total No. of Questions : 12]

SEAT No. :

P1463

[4759]-220

[Total No. of Pages : 2

B.E. (Computer)

NEURAL NETWORKS

(2008 Course) (Semester-II) (Elective-III) (410450)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answers to the two sections should be written in separate answer books.*
- 2) *Attempt Q.1or Q.2, Q.3 or Q.4, Q.5or Q.6 from section I and Q.7 or Q.8,Q.9or Q.10,Q.11or Q.12 from section II*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Figures to the right side indicate full marks.*
- 5) *Use of Calculator is allowed.*
- 6) *Assume suitable data if necessary*

SECTION-I

- Q1)** a) Discuss the basic architecture of a Biological Neural Net and compare it with Artificial Neural Net. [8]
- b) What is Linear Separability? Illustrate with example. Can single perceptron classify linear separable patterns? [8]

OR

- Q2)** a) Explain the McCulloch-Pitts(MP) model and its implementation for the realization of NOR gate. What is the importance of bias term? [8]
- b) Compare LMS, Perceptron and delta learning laws. [8]
- Q3)** a) Draw and explain the architecture of RBFN (Radial Basis Function) Network? How it act as classifier? [10]
- b) What is the use of activation functions in ANN training? Discuss any 2 activation funtions. [8]

OR

P.T.O.

Q4) a) What is linearly Non-separable classification problem? Can single Perceptron solve such problem? Discuss ADALINE computing model of a neuron. [10]

b) Discuss in brief the significance of learning constant, learning law and momentum term in back propagation training. [8]

Q5) a) How associative memory models classified? With diagram explain the working of Auto-associative Neural Network. [8]

b) What is meant by simulated annealing? What is annealing schedule? [8]

OR

Q6) a) With example illustrate the concept of stochastic update and thermal equilibrium. [8]

b) Explain the architecture of Boltzmann machine. [8]

SECTION-II

Q7) a) How the self-organizing network is trained? Illustrate the Kohonen's learning with suitable example. [10]

b) Compare between competitive learning and vector quantization. Why it is called as unsupervised learning? [8]

OR

Q8) a) What is plasticity- stability dilemma problem? Explain the ART Training algorithm used for pattern clustering. [10]

b) Discuss the architecture of Recurrent Neural Network. [8]

Q9) a) How an optimization problem is formulated for a solution using a neural network model? Explain with example. [8]

b) Draw and explain the architecture of Bidirectional Associative Memory. [8]

OR

Q10)a) Explain with architecture and algorithms, the use of ANN in handwritten digit recognition. [8]

b) Discuss in brief auto-association and hetero-association process used for neural processing. [8]

Q11)a) How Fuzzy sets are different than traditional set? How Fuzzy logic can be used with Neural Networks for supervised or unsupervised learning? [8]

b) What do you understand by Soft Computing? Explain and compare its different components/tools with features. [8]

OR

Q12)a) Compare Neuro Fuzzy systems with traditional Neural systems. State the advantages and disadvantages. [8]

b) Explain the Neuro- Fuzzy architecture of Fuzzy Back propagation training. How the architecture is different than traditional Feed Forward Nertwork [8]

