CBCS SCHEME

USN Learning Resource Cen

15EC653

Acharya Institute & Technology Sixth Semester B.E. Degree Examination, Feb./Mar. 2022

Artificial Neural Networks

Max. Marks: 80 Time: 3 hrs.

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

With a neat schematic, explain artificial neuron model. Provide the equation. (08 Marks) Explain the perceptron learning algorithm. (08 Marks)

- What is meant by linear separability? Explain. (06 Marks)
 - Explain any two activation function used in the neural networks. (05 Marks) b.
 - Draw and explain the architecture of a three layered feed forward neural network. (05 Marks)

Module-2

- Explain α LMS learning algorithm. 3 (08 Marks)
 - Define and illustrate the mean square error function. (08 Marks)

OR

- Explain the application of LMS in noise cancellation. (08 Marks)
 - State and describe the steepest descent search rule. What is the condition on learning rate for convergence of thin algorithm? (08 Marks)

Module-3

- Explain SUM classifier for linearly separable classes. (08 Marks)
 - Describe the application of RBF networks for face recognition. (08 Marks)

OR

- Describe radial basis function networks. (08 Marks)
 - Explain the application of SVM for image classification problem. (08 Marks)

Module-4

- With a neat architecture, explain Boltzmann machine. (08 Marks)
 - b. What is associative learning? Explain associative memory model. (08 Marks)

OR

- Explain Brain State In A Box neural network. (08 Marks)
 - Explain the concept of simulated annealing. (08 Marks)

Module-5

- Write a short note on vector quantization. (08 Marks)
 - Explain how dimensionality reduction can be achieved using principal component analysis. (08 Marks)

- Explain the concept of growing neural GAS algorithm. (08 Marks) 10
 - (08 Marks) Describe Kohonen self organization map in detail.

Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice. Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.