

www.FirstRanker.com

## M.Tech I Semester Supplementary Examinations August/September 2018 NEURAL NETWORKS & APPLICATIONS

## (Common to DSCE and ECE)

(For students admitted in 2013, 2014, 2015 & 2016 only)

Time: 3 hours

Max. Marks: 60

Answer any FIVE questions

## All questions carry equal marks

- \*\*\*\*
- 1 (a) With the help of a diagram, explain biological neuron along with its properties.
  - (b) Give a flow graph model of an artificial neural network and explain its working.
  - (c) Define threshold value. How to fix the threshold value and explain the role of threshold in the neuron?
- 2 (a) Why a single layer of perceptron cannot be used to solve linearly inseperable.
  - (b) With suitable diagram, explain the architecture and training algorithm of the Adaline?
- 3 (a) What is back propagation? With a schematic two-layer feed forward neural network, derive its learning algorithm. Also discuss its learning difficulties and improvements.
  - (b) What is the purpose of polynomial networks?
- 4 (a) Explain the architecture and training of counter propagation networks.
  - (b) Explain the architecture of the Grossberg layer.
- 5 (a) What is the Kohonen layer architecture and explain its features?
  - (b) What is adaptive resonance theory? Explain how this theory is used to explain cluster discover network.
- 6 (a) Explain the architecture of discrete Hopfield model; Construct its energy function a size of N neurons. Show that the energy function decreases every time the neuron output changed.
  - (b) With suitable diagram, explain the learning of Boltzmann machines?
- 7 (a) With an example, explain how neural network helps in solving simultaneous linear?
  - (b) Discuss about VLSI implementation process using neural networks.
- 8 (a) Describe how a neural network may be trained for a pattern recognition task. Illustrate with an example.
  - (b) What are invariant characteristics of neuro computing model? Explain each of them.

\*\*\*\*\*