Code: 9D06105

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

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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.

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