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BICSE-003

B.Tech. – VIEP – COMPUTER SCIENCE AND ENGINEERING (BTCSVI)

Term-End Examination

December, 2015

BICSE-003 : NEURAL NETWORK

Time : 3 hours *Maximum Marks : 70*

Note : *Answer any **seven** questions. All questions carry equal marks. Assume the missing data, if any.*

1. Define neural network. What do you mean by biological activations of a neuron ? Explain all functional units with the help of a diagram. *10*

2. (a) Explain perception with examples. *5*

(b) Explain the Perceptron Training algorithm with suitable examples. *5*

3. (a) Explain the performance of neural networks based on computational resources. *5*

(b) Explain the application of neural networks in the field of forecasting. *5*

4. Explain Boltzmann Machines as a generalization of Hopfield Networks. *10*

5. (a) Calculate the Hamming distances between stored vectors and input vectors using diagram. *5*

(b) Write the simple competitive learning algorithm. *5*

6. (a) Explain the recurrent network with hidden nodes, to which Williams and Zipser's training procedure can be applied. *5*

(b) Write the steps for supervised training algorithm for a network proposed by Williams and Zipser. *5*

7. (a) What is a selective-attention network ? Explain with a neat sketch. *5*

(b) Write a short note on storage capacity of Hopfield networks. *5*

8. What is Supervised learning and Unsupervised learning ? Differentiate between the two of them. *10*

9. (a) Define Pocket algorithm. Write down the steps of Pocket algorithm. *5*

(b) Write the Back Propagation algorithm. *5*

10. Write short notes on any ***two*** of the following : *2×5=10*

(a) Polynomial Network

(b) Multilevel Discrimination

(c) Madalines
