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BICSE-003

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

Term-End Examination

June, 2015

00035

BICSE-003 : NEURAL NETWORK

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **seven** questions. Each question carries equal marks. Assume the missing data, if any.*

1. Compare the performance of a computer and a biological Neural Network in terms of speed, processing, size and complexity, storage, fault tolerance and control mechanism. *10*

2. With the help of a suitable diagram, discuss the functioning of a simple artificial neuron. Explain how is the functionality affected, if two such neurons are connected in series. *10*

3. Describe the back propagation algorithm with the help of an example. *10*

4. What are the adaptive multi-layer networks ? Also discuss about the Tiling Algorithm in detail. *10*

5. Explain Radial Basis Function (RBF) network for function approximation, with one output unit and L hidden units. Draw suitable diagram. *10*

6. Explain the architecture of a Boltzmann machine. Illustrate it with suitable diagrams. *10*

7. Discuss the role of

   (a) Selection,

   (b) Cross-over, and

   (c) Mutation

   in the context of a genetic algorithm. *10*

8. Discuss the essential differences between supervised and unsupervised learning in Neural Networks. *10*

9. (a) How does Fuzzy theory differ from Probability theory ?

   (b) Describe the major components of an Adaptive Neuro-Fuzzy Inference System. *2×5=10*

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

    (a) Regularization

    (b) Hopfield Networks

    (c) Madaline Networks
