

**B.Tech. - VIEP - COMPUTER SCIENCE AND  
ENGINEERING (BTCSVI)**

**Term-End Examination**

00713

June, 2018

**BICSE-003 : NEURAL NETWORK**

*Time : 3 hours*

*Maximum Marks : 70*

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

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1. Discuss the working of Biological neuron and compare it with the working of Artificial neuron. Draw suitable diagram for each. 10
  
2. What is a perceptron ? Discuss the role of perceptron in neural network. Write a perceptron training algorithm. Illustrate the perceptron training algorithm with suitable example. 10
  
3. What are ADALINEs ? How do ADALINEs differ from MADALINEs ? Discuss both ADALINEs and MADALINES with suitable example. 10

4. Differentiate between following : 5+5=10
- (a) Prediction network and Polynomial network
  - (b) Adaptive multilayer network and Prediction network
5. What is supervised learning ? How does supervised learning differ from unsupervised learning ? List the techniques addressed by these two learning mechanisms. 10
6. Discuss any *two* of the following, with suitable examples. 5+5=10
- (a) Counter Propagation Networks
  - (b) Adaptive Resonance Theory
  - (c) Radial Basis Function
7. What do you understand by the term Simulated Annealing ? Discuss the role of simulated annealing in neural networks. Give suitable example in support of your discussion. 10
8. What is Adaptive Neuro Fuzzy Inference System (ANFIS) ? How does ANFIS differ from Neuro Fuzzy Inference System ? Discuss the role and utility of Neuro Fuzzy Inference System in the neural networks. 10

9. (a) What is the role of optimization methods in neural networks ? List the various optimization methods used in neural networks. 5
- (b) Give Hebb's rules in the context of unsupervised learning. 5
10. Write short notes on any *two* of the following : 5+5=10
- (a) Gradient Descent Technique
- (b) Bi-Directional Associative Memory Networks
- (c) Application of Neural Networks
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