

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

00569

Term-End Examination

December, 2017

BICSE-003 : NEURAL NETWORK

Time : 3 hours

Maximum Marks : 70

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

1. Describe the term Neural Network. Explain all functional units of a neural network with the help of a suitable diagram. Discuss the working of an artificial neuron. 10

2. Write short notes on any *two* of the following : $2 \times 5 = 10$
 - (a) Single Layer Neural Network
 - (b) Multilayer Neural Network
 - (c) Back Propagation Algorithm

3. What are Adaptive Multilayer Networks ? How do adaptive multilayer networks differ from polynomial networks ? Discuss both adaptive multilayer networks and polynomial networks with suitable examples. 10

4. (a) What is a Radial Basis Function ? Discuss the role of radial basis function in neural networks. 5
- (b) What are Prediction Networks ? How do they predict ? Discuss with a suitable example. 5
5. Explain any *two* of the following with suitable examples : $2 \times 5 = 10$
- (a) Boltzmann Machine
- (b) Hopfield Networks
- (c) Adaptive Resonance Theory
6. Discuss Hebb's rule in context of supervised learning and unsupervised learning. 10
7. What is Gradient Descent Technique ? Discuss the role of gradient descent technique in neural networks. Give a suitable example in support of your discussion. 10
8. Describe the architecture of Counter Propagation Network, with a suitable diagram. What is the utility of a counter propagation network ? 10
9. (a) What is Fuzzy Logic ? What is the role of fuzzy logic in neural networks ? 5
- (b) Explain the term Bi-directional Associative Memory Networks. 5

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

- (a) Optimization Methods in Neural Networks
 - (b) Perception Model
 - (c) Associative Memory Networks
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