Code No: R05411009 | **R05** | **Set No. 2**

IV B.Tech I Semester Examinations,November 2010
ARTIFICIAL NEURAL NETWORKS
Common to Bio-Medical Engineering, Electronics And Telematics, Electronics And Instrumentation Engineering

Time: 3 hours | Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Explain the biological prototype of neuron. Also explain the characteristics of neuron.

   (b) List and explain the various activation functions used in modeling of artificial neuron. Also explain their suitability with respect to applications. [8+8]

2. What are different types of learning schemes used in training of artificial neural networks?. Explain each of them clearly with suitable examples. [16]

3. (a) Explain three states of ART network.

   (b) Write short note on the basic architecture and operation of ART network.
   [8+8]

4. (a) Explain Hopfield neural network from fundamentals.

   (b) Discuss the capacity of Hopfield neural network. [8+8]

5. (a) Briefly discuss about the sequential and batch modes of training in a back-propagation algorithm and also stopping criteria.

   (b) Briefly explain about few applications of backpropagation. [8+8]

6. With suitable diagram explain the algorithm and working of Kohonens self-organizing map. [16]

7. With a neat sketch explain operation of Kohonens self-organizing feature map (SOM) algorithm. And explain what type of problems it is most suitable. [16]

8. (a) Explain how neural network principles are useful in control applications.

   (b) Discuss a neural network model for energy minimization in a texture classification problem. [8+8]

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R05

Set No. 4

IV B.Tech I Semester Examinations,November 2010
ARTIFICIAL NEURAL NETWORKS
Common to Bio-Medical Engineering, Electronics And Telematics,
Electronics And Instrumentation Engineering

Time: 3 hours
Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Explain how neural network principles are useful in control applications.
   (b) Discuss a neural network model for energy minimization in a texture classification problem. [8+8]

2. (a) Briefly discuss about the sequential and batch modes of training in a back-propagation algorithm and also stopping criteria.
   (b) Briefly explain about few applications of backpropagation. [8+8]

3. (a) Explain three states of ART network.
   (b) Write short note on the basic architecture and operation of ART network.
   [8+8]

4. With suitable diagram explain the algorithm and working of Kohonens self-organizing map. [16]

5. (a) Explain the biological prototype of neuron. Also explain the characteristics of neuron.
   (b) List and explain the various activation functions used in modeling of artificial neuron. Also explain their suitability with respect to applications. [8+8]

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   (b) Discuss the capacity of Hopfield neural network. [8+8]

8. What are different types of learning schemes used in training of artificial neural networks?. Explain each of them clearly with suitable examples. [16]

⋆ ⋆ ⋆ ⋆ ⋆

2

Code No: R05411009 **R05** **Set No. 1**

IV B.Tech I Semester Examinations,November 2010
ARTIFICIAL NEURAL NETWORKS
Common to Bio-Medical Engineering, Electronics And Telematics,
Electronics And Instrumentation Engineering

Time: 3 hours Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. With suitable diagram explain the algorithm and working of Kohonens self-organizing map. [16]

2. (a) Explain Hopfield neural network from fundamentals.

   (b) Discuss the capacity of Hopfield neural network. [8+8]

3. (a) Briefly discuss about the sequential and batch modes of training in a back-propagation algorithm and also stopping criteria.

   (b) Briefly explain about few applications of backpropagation. [8+8]

4. What are different types of learning schemes used in training of artificial neural networks?. Explain each of them clearly with suitable examples. [16]

5. (a) Explain three states of ART network.

   (b) Write short note on the basic architecture and operation of ART network. [8+8]

6. (a) Explain the biological prototype of neuron. Also explain the characteristics of neuron.

   (b) List and explain the various activation functions used in modeling of artificial neuron. Also explain their suitability with respect to applications. [8+8]

7. With a neat sketch explain operation of Kohonens self-organizing feature map (SOM) algorithm. And explain what type of problems it is most suitable. [16]

8. (a) Explain how neural network principles are useful in control applications.

   (b) Discuss a neural network model for energy minimization in a texture classification problem. [8+8]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: R05411009 | **R05** | **Set No. 3**

IV B.Tech I Semester Examinations,November 2010
ARTIFICIAL NEURAL NETWORKS
Common to Bio-Medical Engineering, Electronics And Telematics, Electronics And Instrumentation Engineering

Time: 3 hours | Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Explain the biological prototype of neuron. Also explain the characteristics of neuron.

   (b) List and explain the various activation functions used in modeling of artificial neuron. Also explain their suitability with respect to applications. [8+8]

2. With suitable diagram explain the algorithm and working of Kohonens self-organizing map. [16]

3. (a) Explain how neural network principles are useful in control applications.

   (b) Discuss a neural network model for energy minimization in a texture classification problem. [8+8]

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7. What are different types of learning schemes used in training of artificial neural networks?. Explain each of them clearly with suitable examples. [16]

8. (a) Explain three states of ART network.

   (b) Write short note on the basic architecture and operation of ART network.

   [8+8]

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