CS7641 ML Practice Quiz  
Module SL 3: Neural Networks

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# Question 1

What is the primary function of a perceptron in a neural network?

A. To compute a non-linear sum of inputs.

B. To apply a thresholding operation after a linear sum of inputs.

C. To integrate multiple layers of input simultaneously.

D. To serve as an activation function for complex computations.

E. To reduce the dimensionality of input data.

# Question 2

In a neural network, what is the purpose of using a sigmoid function?

A. To create a linear relationship between inputs and outputs.

B. To allow for threshold-based activation of neurons.

C. To enable non-linear transformations of input data.

D. To simplify the network by removing hidden layers.

E. To categorize input data into binary classifications.

# Question 3

How do weights in a neural network typically get initialized for training?

A. With large random values to increase complexity.

B. With values of 1 to standardize input effect.

C. With small random values to avoid overfitting initially.

D. With zeros to simplify the initial computation.

E. Based on the mean value of input data.

# Question 4

What is the role of backpropagation in a neural network?

A. To increase the speed of input data processing.

B. To distribute errors backward through the network for weight adjustment.

C. To linearly separate data points in the training set.

D. To classify input data into predefined categories.

E. To reduce the computational load on the network.

# Question 5

What does a high degree of restriction bias in a neural network imply?

A. The network can only process linear data relationships.

B. The network considers a wide range of hypothesis representations.

C. The network is limited to Boolean functions.

D. The network has a narrow set of hypotheses it can represent.

E. The network requires minimal training data.

# Answer Key

1. B

2. C

3. C

4. B

5. D