

# CS7641 ML Practice Quiz

## Module SL 3: Neural Networks

Created by Kyle Nakamura with the help of ChatGPT

### 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