1 point

1. What is the mathematical formula for the ReLU activation function?

- (●) f(x) = max(0, x)
- ( ) f(x) = 1 / (1 + e^-x)
- ( ) f(x) = tanh(x)
- ( ) f(x) = x

1 point

2. What is the purpose of applying an activation function in a neuron?

- ( ) To normalize the input values
- (●) To introduce non-linearity into the model
- ( ) To calculate the weighted sum of inputs
- ( ) To produce the final prediction

1 point

3. In the equation Z = W * X + b, what does Z represent?

- ( ) The weight matrix
- ( ) The input matrix
- ( ) The bias vector
- (●) The matrix of weighted sums for all neurons in a layer

1 point

4. What is the primary goal of backpropagation in neural networks?

- ( ) To initialize the model's parameters
- ( ) To make predictions on new data
- (●) To minimize the overall error and improve model accuracy
- ( ) To introduce non-linearity into the model

- (●) To minimize the overall error and improve model accuracy
- ( ) To introduce non-linearity into the model

1 point

5. Which step involves feeding the input data through the network to generate a prediction?

- (●) Forward Pass
- ( ) Loss Calculation
- ( ) Backward Pass
- ( ) Weight Initialization

1 point

6. Given a categorical feature with values ['red', 'green', 'blue'], what would be the one-hot encoded representation of 'green'?

- ( ) [1, 0, 0]
- (●) [0, 1, 0]
- ( ) [0, 0, 1]
- ( ) [1, 1, 0]